RDP

RURAL DEVELOPMENT PERSPECTIVES

United States Department of Agriculture Economic Research Service

Vol. 3, Issue 1, October 1986

Airline Deregulation and Rural Areas

Improved Rural Trucking

Rural Recycling

New Ways To Look at the Farm Population

Budget Cuts and Local Government Services

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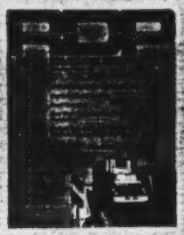

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Rural Development Perspectives is published three times per year (February, June, and October) by USDA's Economic Research Service. Subscription price is $10.00 per year ($12.50 for foreign addresses); single issues cost $3.75 each ($4.69, foreign). Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; telephone (202) 783-3238. Make check or money order payable to Superintendent of Documents.

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Editor's Notebook

A major change in national public policy over the last decade has been the trend toward deregulation. The rationale for deregulation was that firms operating in a more open market would function more efficiently by setting prices and providing services in response to demand rather than according to government rules.

By 1982, Congress had passed several major new laws either totally or partially lifting economic regulations in transportation, finance, and energy. In the debate leading to passage of these laws, questions were asked about which groups and communities would benefit from relaxed regulation. While there appeared to be a consensus that eased regulations would benefit consumers in large markets, especially in large urban areas, there was less agreement about the outcome in smaller rural markets. Under regulation, since firms were required to serve small markets, they were presumed to overcharge in larger urban areas, so in effect, urban people were subsidizing services provided to rural people.

Once regulations were lifted or reduced, some argued, rural service would decline and prices would increase. Others argued that while adjustments would be made and some places would lose service, on balance, service to small markets would not be significantly reduced.

This issue features two articles that provide some answers on how reduced regulation has affected rural transportation services. Examining airline deregulation, Patrick Murphy and Wayne Watkins conclude that fears about large negative impacts on rural areas were unfounded. Both rural and urban areas have benefited from deregulation but rural communities less than the big cities. In general, airline fares are down and frequency of flights is up. And some rural people seem to benefit by driving to large airports to get better fares and connections.

The impact of regulatory reform on interstate motor carrier service—trucking—is similar. Michael Pustay reports that, since interstate motor carrier regulations have been eased, service to sampled communities in eight States has increased.

On a different note, farmers often argue that the farm problem is not entirely their own doing. Kitchen and Zahn do in fact conclude that factors beyond farmers' control have played an important role in bringing on the current crisis. Their examination of the origins of the farm crisis shows that farmers could not have completely escaped the impact of the major shift in general economic policies between the 1970's and the 1980's. While dealing with complicated concepts, Kitchen and Zahn demystify some of the more important economic developments that underlie the current farm problem.

Sara Mills Mazie
Executive Editor

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Patrick J. Murphy and Wayne S. Watkins

Rural America Benefits From Airline Deregulation, But Less Than Urban America

Rural America has benefited from airline deregulation, but with more mixed results than urban America. Many rural routes were abandoned by the major carriers after airline deregulation, but the commuter airline industry took over most of that service. These rural routes now receive more frequent service, but with smaller aircraft. Fares are down, after adjusting for inflation, for all sizes of communities, although larger cities have access to lower fares than smaller points and the fare disparity is widening. Passenger traffic at some small community airports is down, as rural residents are driving to more distant, larger airports to fly.

The Airline Deregulation Act, signed into law in October 1978, signaled a marked change in Government control of the airline industry. The act removed the CAB's authority to regulate the routes carriers served, effective December 31, 1981. Since then, carriers have been free to serve whatever new domestic routes they wanted.

The act also ended CAB control over prices, effective January 1, 1983. Since then, carriers have been free to set prices as they see fit. This freedom allows carriers to respond quickly to changes in costs, business climate, and competitive pressure.

The act also lets carriers abandon routes virtually at will. The last freedom, however, is tempered by another new part of the law, the "essential air service" (EAS) program, begun in response to congressional concerns that, in liberalizing airline regulation, small communities might lose air service. The EAS guarantees that small communities that had airline service before deregulation would continue to be served by an air carrier for at least the next 10 years. The act directed the CAB to determine what the level of essential service should be for such communities after consulting with community and State officials.

For communities in the EAS program, no air carrier may terminate or reduce air service in a manner that will lower the community's total service below the guaranteed level without filing notice with the Department of Transportation (DOT), as well as the appropriate State agencies and communities involved.

After a notice of intent to terminate or reduce service is filed for an eligible point, DOT must seek a replacement carrier willing to provide essential service for that community. The original carrier must continue to provide essential air service until suitable replacement service is in place. Carriers forced to operate beyond the notice period are entitled to a subsidy to the extent of actual losses. Replacement service can also be subsidized by DOT if no carrier is willing to provide the required service.

In the contiguous 48 States, 468 points were protected under the essential air service program (EAS points) in 1978. As of March 1985, 336 of them had EAS definitions. The remaining 132 points are major cities with no need of EAS protections.

Of the 336 points with EAS definitions, 105 are served by 46 subsidized carriers with a 1986 subsidy of $24 million and an average subsidy per community of $229,000. This represents a major decline in Federal spending, which has been falling steadily since deregulation. In 1978, the last year of regulation, 202 points were subsidized at a cost of $75 million. (The EAS program also covers 45 subsidized points in Alaska and in U.S. territories. This article does not cover the results of deregulation in those areas.)

Deregulation Benefited All Sizes of Communities, Especially Large Cities

Scheduled air service in the United States is provided to over 500 points, but the largest airports, known as air traffic hubs, dominate the system. The 109 air traffic hubs account for 97 percent of the passengers while the other more than 400 airports account for only 3 percent. Residents of both urban and rural areas rely on the 109 hub airports since they include not only major cities like Chicago and New York but also Syracuse, NY, Louisville, KY, Wichita, KS, Colorado Springs, CO, Eugene, OR, and many other mid-sized cities.

Rural residents also have a strong interest in service to the more than 400 smaller points (nonhubs) such as Asheville, NC, Columbia, MO, Grand Island, NE, and Bakersfield, CA. These smaller points,

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though representing only 3 percent of the passengers, still account for over 6 million passengers most of whom live in rural areas.

The changes in the air transport system since deregulation, by hub and nonhub airports, are summarized in table 1.

Deregulation has benefited most U.S. travelers, especially those in major markets. Flight frequency has increased, particularly at large hubs, and prices, though up in actual terms, have dropped after being adjusted for inflation. Traffic for all markets as a group has grown.

Small communities (nonhubs) have experienced more mixed results from deregulation; communities eligible for the EAS program have fared somewhat better than those not eligible. The number of flights has risen slightly at small communities, especially flights to large or medium hub points. The type of service at EAS points, however, has changed as small, propeller-driven aircraft, primarily operated by commuter carriers, have replaced larger, jet aircraft, which have been shifted to major markets. Prices, after adjustment for inflation, have fallen, although less than at larger cities. Traffic at small airports has declined because of the change in the type of service. Many of these airports, served only by commuter carriers, cannot offer online connecting service to a passenger's final destination, so passengers take the commuter plane to a hub airport. But there, they have to deplane, collect their baggage, and board another flight to their final destination. Perhaps more important, better service and discount fares at nearby hub airports have enticed many passengers in rural areas to drive farther to take a plane.

At the non-EAS, nonhub points (149 such points in 1978, 77 now) the decline in service has been dramatic. (Non-EAS points are those that were receiving no service, or service only by commuter carriers when the deregulation act was passed, and are not eligible for an EAS guarantee because they were not listed on any air carrier's certificate.) The decline in service is due mostly to elimination of service at 95 points since deregulation. Reliable traffic statistics are not available for the remaining non-EAS points.

Table 1—Airline service changes, January 1978 to January 1986

Type of airport[1]	Number of points as of Jan. 86	Aircraft departures	Available seats	Average size of aircraft	Average price[2]	Passengers[3]
Hubs	109	Increase	Increase	Decrease	Decrease	Increase
Nonhubs:						
EAS[4]	345	Increase	Decrease	Decrease	Decrease	Decrease
Non-EAS[5]	77	Decrease	Decrease	Increase	Decrease	Not available

[1]Air traffic hubs are cities and standard metropolitan statistical areas receiving aviation services.
[2]Average price comparisons relate 12 months ended September 1985 to 12 months ended September 1979 and factor out inflation.
[3]Calendar year 1984 compared with 1978.
[4]Points with a guarantee of essential air service.
[5]Points not guaranteed essential air service because they were not on the certificate of any carrier when the Airline Deregulation Act was passed.

Source: *Official Airline Guide.*

Table 2—Changes in departures, January 1978 to January 1986

Type of airport	Number of points	Weekly departures		
		January 1978	January 1986	Change
		Number		*Percent*
Hubs[1]	109	94,536	135,694	43.5
Large	23	61,727	90,665	46.9
Medium	33	21,244	30,070	41.5
Small	53	11,565	14,959	29.3
Nonhubs:				
EAS	345	23,264	25,662	10.3
Non-EAS	77	5,167	2,538	−50.9

[1]Airports are grouped into hub classifications depending upon the passengers enplaned at that community as a percent of total passengers enplaned for all operations of U.S. certificated air carriers in the 50 States, the District of Columbia, and other U.S. areas. The current classification of hubs is:

	Percentage of total passengers
Large hub	1.00 or more
Medium hub	0.25 to 0.999
Small hub	0.05 to 0.249
Nonhub	less than 0.05

Source: *Official Airline Guide.*

Number of Flights Rose at Most Airports

Since deregulation, the number of aircraft departures in scheduled service has increased for all communities except the smallest (table 2).

Service at nonhubs showed mixed results. Departures at nonhubs eligible for EAS rose by 10 percent, while departures at nonhubs not eligible for EAS declined by more than 50 percent. The sharp decline in departures at nonhub, non-EAS points resulted primarily from elimination of service at 95 of the 149 non-EAS points, while only 23 new points were added.

The moderate increase in departures at nonhub, EAS points and the decline of departures at nonhub, non-EAS points reflect economic reality. Before deregulation, abundant service with large aircraft was provided at a loss on many short-haul, lightly traveled routes because such losses could be offset by overpricing service on heavily traveled routes. After deregulation, airlines could no longer afford such a strategy. Competition forced

Figure 1
For many rural airports, deregulation brought more flights, but smaller planes

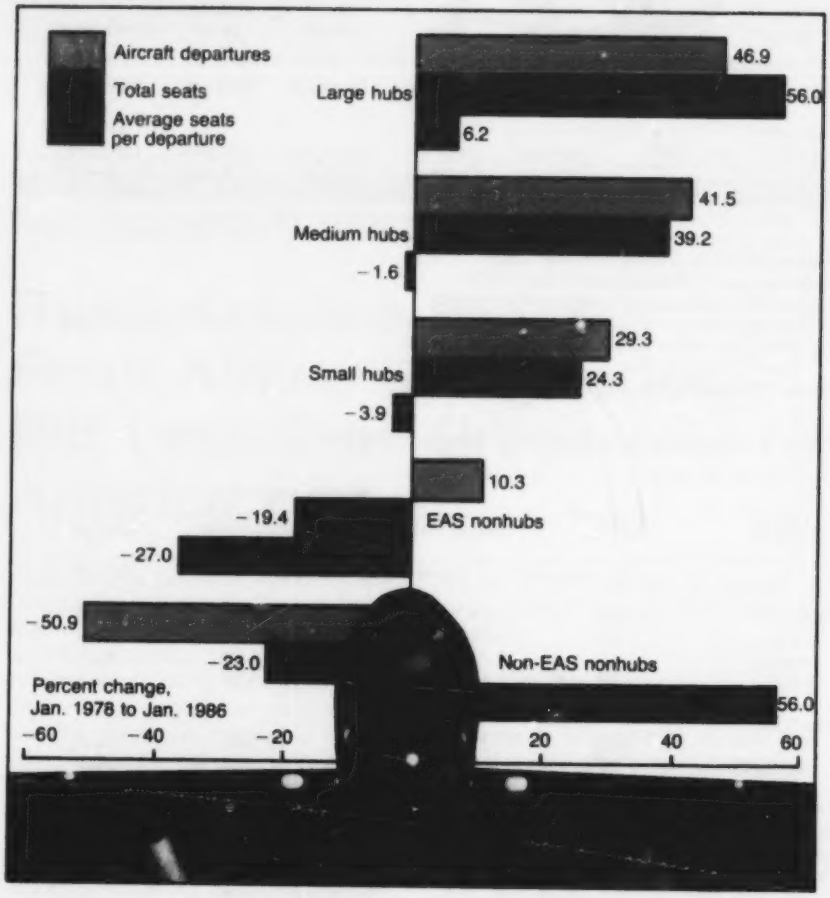
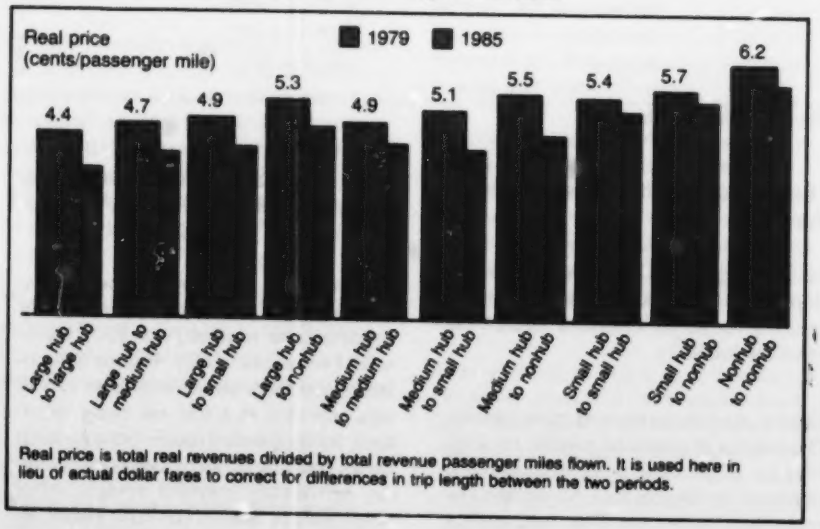


Figure 2
Real prices are down more in the larger markets



Real price is total real revenues divided by total revenue passenger miles flown. It is used here in lieu of actual dollar fares to correct for differences in trip length between the two periods.

carriers to price services more consistent with the costs of providing the services. Airlines, therefore, shifted larger aircraft away from lightly traveled routes to more heavily traveled routes, reduced service at some points, and often eliminated large aircraft service at small points.

Another explanation of reductions in service and, in particular, the elimination of service at many small airports is the availability of other airports nearby. If nearby airports are within driving distance and offer superior service and lower prices, consumers will go there instead. A random sample of six points that have lost service since deregulation shows that all are within 21-128 miles of an alternate airport (25 minutes to 2½ hours away by car).

The number of travelers affected by service reductions at the smaller communities is but a fraction of the total travel market. For example, the 345 nonhub EAS points generate about half the traffic of the 53 small hubs and less than 10 percent of the traffic of the 23 large hubs.

Smaller Airports Now Served by Smaller Planes with Fewer Seats

Like departures, the number of seats offered at large hubs since deregulation has increased significantly, with lesser increases at medium and small hubs (fig. 1). At nonhubs, both EAS and non-EAS seats have declined significantly (table 3).

The changes in seating since deregulation highlight two factors: the shift of large aircraft to larger markets and the penetration of commuter carriers at small points. At the largest hubs, seats increased faster than departures, indicating more extensive use of larger aircraft. At the smaller points, including medium and small hubs, seats increased less than departures, indicating use of smaller aircraft. At the non-EAS points, served by commuter carriers with small aircraft, seats increased both before and after deregulation (table 4).

The change in seating is most dramatic at nonhubs. Even though more planes fly out of EAS-eligible nonhubs, the average number of seats per plane declined markedly both as a result of the shift of large aircraft to bigger markets and the dominance of commuter air carriers.

Table 3—Changes in available seats, January 1978 to January 1986

Type of airport	Number of points	Weekly seats		
		January 1978	January 1986	Change
		Number		*Percent*
Hubs	109	10,145,006	15,154,790	49.4
Large	23	7,028,965	10,965,139	56.0
Medium	33	2,120,709	2,952,778	39.2
Small	53	995,332	1,236,873	24.3
Nonhubs:				
EAS	345	1,130,567	911,336	−19.4
Non-EAS	77	59,698	45,960	−23.0

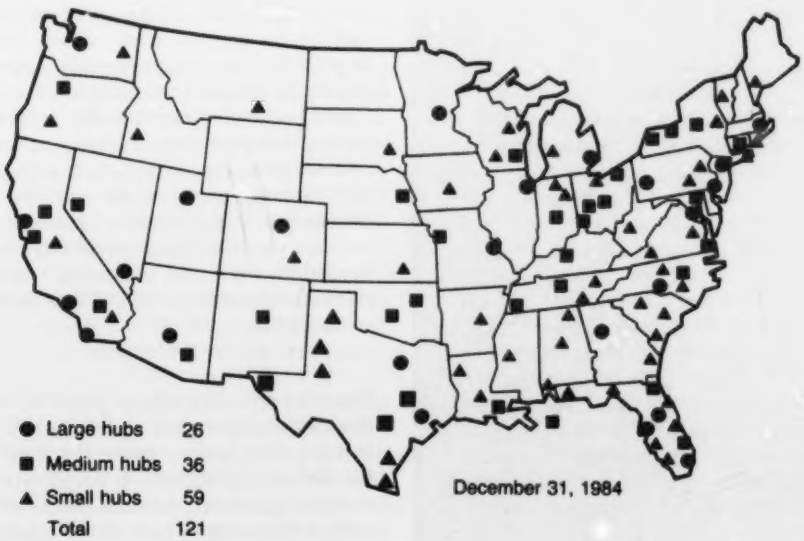
Source: *Official Airline Guide.*

Table 4—Changes in average seats per departure, January 1978 to January 1986

Type of airport	Number of points	Seats per departure		
		January 1978	January 1986	Change
		Number		*Percent*
Hubs:				
Large	23	113.8	120.9	6.2
Medium	33	99.8	98.2	−1.6
Small	53	86.1	82.7	−3.9
Nonhubs:				
EAS	345	48.6	35.5	−27.0
Non-EAS	77	11.6	18.1	56.0

Source: Official Airline Guide.

Air traffic hubs



At many small airports, use of jet aircraft is uneconomical, so carriers either switched to smaller aircraft or abandoned the markets if smaller aircraft were unavailable. To fill this void, commuter carriers with 15-19 seat aircraft have emerged as the principal carriers at the nonhubs. The transition to commuter carriers is most apparent at EAS-eligible nonhubs, since commuter carriers are eligible to participate in the EAS program and are entitled to seek a subsidy to support their operations where necessary. Commuters provide the only service at about 80 percent of the EAS eligible nonhub airports. At the non-EAS nonhubs, commuter carriers have always been the principal carriers.

Real Prices Are Down, But Less Dramatically at Small Airports than at Large

Changes in airline prices since deregulation parallel the changes observed in service. Some small communities have benefited, but not as much as larger communities. Average fares have gone up in all markets since deregulation. However, when the effects of inflation are factored out, real fares have declined in markets of all sizes (fig. 2).

Air transportation, therefore, is a better buy now than before deregulation. The decline in fares was most favorable in major markets such as large-hub to large-hub routes (like New York to Chicago) where fares declined by 17 percent. In the smallest category of markets—nonhub to nonhub (like Bakersfield to Stockton, CA)—fares declined on average by only 7 percent.

Between the two extreme sizes of markets, average fare reductions were greater in the larger markets (table 5). As a result, the spread between the average fare per mile or "yield" of the largest and smallest markets was about 7 cents per mile in 1985 compared with about 4 cents per mile in 1979, a 75-percent increase (fig. 2).

Two factors account for the overall reduction in prices and the increased spread in prices between small and large markets: low-fare carriers and the availability and depth of discount fares. In many major markets, low-cost carriers, like People Express and New York Air, inaugurated service at fares below normal coach fares.

Their low fares in turn forced lower fares by competing carriers. Further, the number and depth of discount fares, at off-peak times for example, or with other restrictions, have increased greatly in direct proportion to the size of market served. That is, large markets have a wider range of discount fares than do small markets. Summing up, the effects of low-cost operators and the variety of discount fares are the primary causes for the differing rates of change in prices between large and small markets.

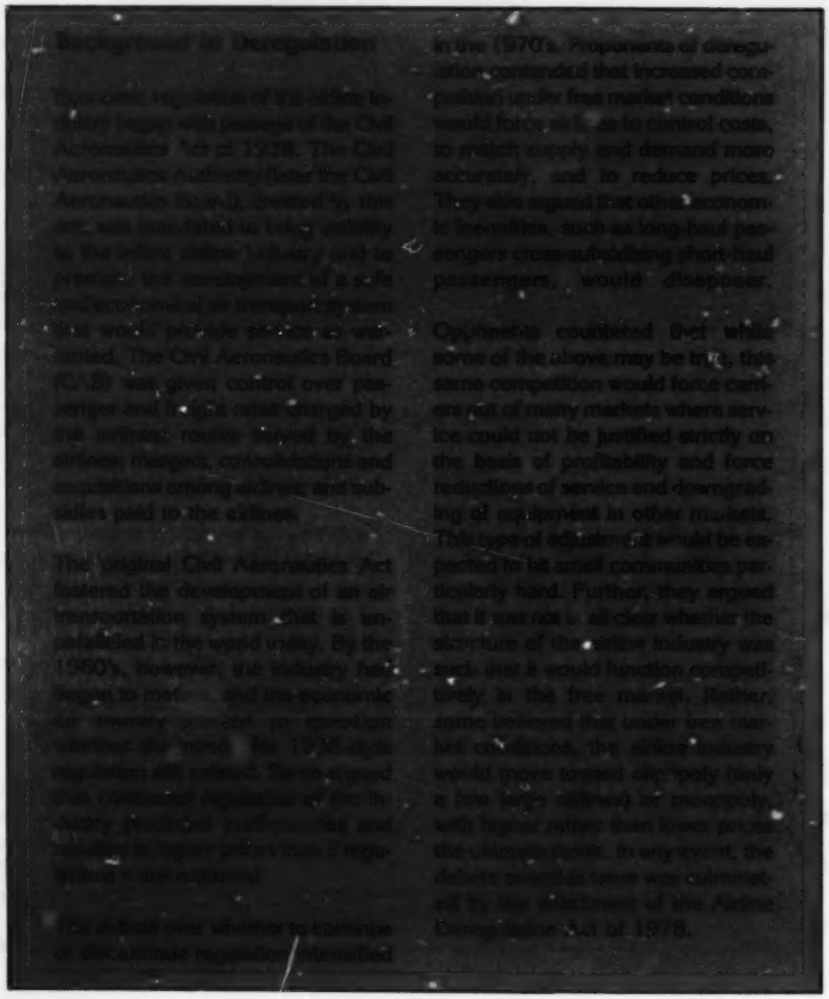
Another cause for some of the differences in fare changes is the end of cross-subsidy. Before deregulation, carriers tended to overprice in heavily traveled long-haul markets and underprice in lightly traveled markets. This policy was the direct result of CAB fare formulas designed to encourage growth in short-haul and lightly traveled markets. The changes in average price (revenue yield per passenger mile flown) since deregulation reflect a change of the fare structure to remove this bias.

Table 5—Changes in prices, actual and adjusted for inflation

Hub-to hub category	Change in average price, 1979	
	Actual	Adjusted for inflation
	Percent	
Large hub-large hub	23.4	-17.4
Large hub-nonhub	30.2	-12.8
Medium hub-medium hub	24.6	-16.1
Medium hub-nonhub	36.3	-8.8
Small hub-nonhub	38.7	-7.1
Nonhub-nonhub	39.6	-6.5

* Revenue yield per passenger mile flown.

Source: Domestic Origin and Destination Survey and U.S. Department of Commerce.



Smaller Airports Losing Passengers

Changes in passenger traffic since deregulation have mirrored the changes in service and price. At large hubs, where flights have increased, aircraft size has grown and real prices have declined. As a result, the number of passengers departing rose by 31 percent, from 179.1 million in 1978 to 233.9 million in 1984 (fig. 3).

At nonhubs eligible for EAS, passenger traffic declined by 11 percent, dropping from 16.4 million in 1978 to 14.7 million in 1984. This decline occurred despite a moderate increase in the frequency of flights offered over this period and a drop in real prices. We trace the decline to the causes discussed earlier, such as the shift of major carriers with large aircraft away from the small markets with replacement by commuter carriers. While commuter carriers offer reliable service, some passengers avoid them because of the smaller aircraft used, coupled with their not providing the same connecting possibilities and price alternatives as major carriers. Those conditions may be changing, however, as more and more commuter carriers become affiliated with major airlines.

Reliable traffic data are not available for the nonhub airports not eligible for EAS. However, it is fair to assume that traffic has declined significantly in this group of markets, particularly since about 95 airports in this category have lost all service since deregulation.

Commuter Carriers Grow in Free Market

As already discussed, one of the chief concerns of Congress in deregulating the airlines was that the airlines would abandon small communities and concentrate their resources on the more heavily traveled, long-haul routes. Anticipating that commuter carriers would have to bear a larger role in providing air service to rural America, Congress expanded the opportunities for commuter carriers to permit them to: (1) participate in the EAS program, receiving subsidies where necessary; (2) participate in the FAA aircraft loan guarantee program; (3) participate in joint-fare agreements with major carriers; and, (4) operate aircraft of up to 60 seats with a maximum payload of 8,000 pounds.

Today's commuter industry got its start in 1947 when the CAB created a new, nonscheduled air carrier category, "air taxis." These carriers were exempt from most regulations as long as they operated aircraft having maximum takeoff weights of less than 12,500 pounds. However, they were required to register with the CAB, to carry passenger liability and personal property insurance, to file their fares, and to report quarterly traffic data. CAB amended its regulations 22 years later to recognize two categories of air taxis: those that operate at least five round trips a week between two or more points, publish flight schedules, and carry mail under contract to the Postal Service, called commuter air carriers, and all other air taxis.

The air taxi industry was of little significance from 1947-69. Only 11 air taxis were registered with the CAB in 1964, for example. But during that period, several technological advances led to the eventual rise of the commuter industry. The introduction of turbojet aircraft in 1958 led to a new type of fleet for the major air carriers. As larger aircraft became dominant in the major carriers' fleets, the economics of serving short-haul, low-density markets became increasingly suspect. Also, in the mid-1960's, the development of the lightweight turboprop engine led to the introduction of aircraft such as the DeHavilland Twin Otter and the Beech 99, which for the first time made available 15- to 19-seat aircraft that were under the CAB's 12,500-pound limitation.

Figure 3
Rural airports are losing passengers

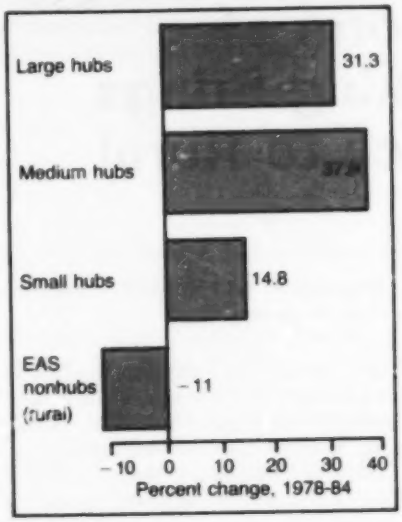
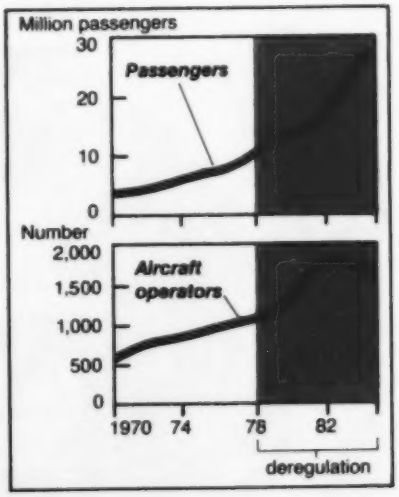


Figure 4
Commuter carriers have grown rapidly, especially since deregulation



These innovations provided the commuters with market opportunities and aircraft that could be flown profitably in low-density, short-haul markets. Commuter carriers continued to grow steadily. From 1970-78, passenger traffic carried by the commuter carriers more than doubled, with the commuters' share of the total domestic passenger market increasing from about 3 percent to 4 percent (fig. 4). Over the same period, the number of passenger and cargo aircraft operated by commuter carriers rose from 687 to 1,200. By 1978, 228 commuter carriers were providing passenger service compared with the 11 air taxis in 1964.

After deregulation, the commuter carriers' penetration into the domestic passenger market escalated even more. From 1978-85, passenger enplanements increased from 11.3 million to 27.3 million and the commuters' share of the domestic passenger market nearly doubled, reaching 8 percent by 1985 (fig. 4). Much of this increase resulted from the expansion of the commuters into markets abandoned by the larger carriers. Other highlights of the commuters' growth during 1978-85 include:

- an increase in average trip length from 121 to 173 miles;
- an increase in average seats per aircraft from 11.9 to 19.2;
- an increase in aircraft use from 1,080 to 1,635 hours per aircraft per year; and,
- an increase in passenger and cargo aircraft operated from 1,200 to 1,745.

The commuter industry registered these gains at the same time it was consolidating its number of passenger airlines—from 228 in 1978 to 179 in 1985.

A recent development that should promote continued growth of the commuter industry as well as provide passengers at small communities with improved service is the trend toward affiliations between commuter carriers and larger airlines. These affiliations, patterned after the USAir (Allegheny) commuter relationship, provide the larger carriers with feeder routes for their long-haul operations. Of more importance, they provide small communities with improved connecting opportunities and more favorable prices, as well as a stability that the commuter industry has often lacked. RDP

For Additional Reading...

Steven Morrison and Clifford Winston, *The Economic Effects of Airline Deregulation*. The Brookings Institute, Washington, DC, 1986.

Michael W. Pustay

Regulatory Reform of Interstate Trucking Brings Improved Service to Rural Communities

Rural communities benefited from Federal regulatory reform of interstate trucking in 1980. Four years after the abolition of most Federal regulations, more rural communities were served by trucking companies than before and they were served by more trucking companies than before. State deregulation of intrastate trucking yielded less striking benefits.

Providing motor carrier service to small, rural communities has been a major concern of transportation policymakers. But what is the best mechanism for assuring it? Government regulation of carrier entry, exit, and pricing? Or an unregulated free market that allows carriers to enter, exit, and set prices on their own?

Finding the right answer to those questions is important to rural communities since they depend on trucking for most of their freight needs. Access to trucking directly affects the ability of rural manufacturers and retailers to compete with urban businesses and farmers to ship their produce. The data we present here suggest that the free market serves rural areas best, at least in terms of trucking services.

Each State was free to maintain its regulation of its intrastate trucking industry. Most States chose to retain their existing controls over entry, exit, and prices charged in intrastate markets. However, Florida (1980), Arizona (1982), Wisconsin (1982), and Maine (1982) deregulated their intrastate industries. Their intrastate carriers were granted complete freedom of entry, exit, and pricing. South Dakota (effective 1981) substantially relaxed entry requirements into its intrastate trucking markets.

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Regulation and Rural Communities: Pros and Cons

How best to ensure adequate rural trucking service was a key issue in the debate leading to passage of the Motor Carrier Act of 1980 (see box, "Background on Trucking Regulation"). Since trucking is the only source of freight transportation to many rural communities, adequate trucking service is vital to such communities' economic health. But there is much disagreement over the best means for encouraging rural motor carrier service.

Many advocates for rural interests assumed that regulation is the best guarantee of trucking service to rural communities because of the legal requirements imposed upon carriers. Before MCA, a trucker had to secure an operating authority from the ICC to provide regulated interstate trucking service to the general public. This operating authority imposed a common carrier obligation on the trucker to serve all persons on the route equally. The ICC was also charged with ensuring that truckers did not engage in "unjust" or "unreasonable" discrimination. Most State regulations impose similar requirements on truckers.

Proponents of deregulation argued that these legal requirements did not protect rural communities because they were not enforced. They noted that carriers were legally free to abandon rural communities without first seeking ICC permission to do so. While the ICC possessed the power to require the truckers to reinstitute abandoned service, proponents of deregulation claimed that the ICC never did so. Since the ICC was not enforcing its own rules regarding abandoned service, the

Photo by J. Norman Reid

Easing State regulations on trucking apparently yielded only modest benefits to small communities.

service provided to rural areas must have been profitable. Thus, concluded proponents, deregulation would have little effect on the availability of rural service.

Proponents of deregulation also argued that ICC regulation did not protect rural communities from adverse price or quality of service discrimination. They noted that the ICC normally accepted as legal without comment or review rates against which no shipper filed a complaint. The passive rate review process adopted by the ICC was alleged to be biased against rural interests: rural interests supposedly lacked the resources and expertise possessed by larger communities necessary to intervene successfully in the regulatory process. Anecdotal evidence was offered to demonstrate that rural communities suffered from adverse price and service discrimination under ICC regulation.

In essence, the free market advocates argued that the ICC was following a policy of benign neglect. It did not actively promote the interests of small communities, nor did it actively attempt to harm them. Service was extended to rural communities because of free market forces, not because of regulation. However, the very process of regulation imposed costs upon shippers and carriers. The free market advocates claimed that because of the policy of benign neglect, small communities would benefit from the elimination of regulation.

New Evidence

What has been the impact of relaxing regulation on rural motor carrier service? To answer this question, we examined eight sample States in detail. One group of States—Texas, Ohio, Minnesota, and New Mexico—have not substantially relaxed their motor carrier regulations. The second group—South Dakota, Florida, Maine, and Wisconsin—have relaxed or eliminated regulatory control over their intrastate trucking industries. (South Dakota relaxed its entry requirements; the other three States eliminated their controls completely.)

By comparing changes in the pattern of service offered to communities in these eight States, the impact of State and Federal regulatory reforms on rural community services can be assessed. Three years were selected for study:

- 1976, representing the pre-reform period,
- 1982, by when regulation had been reformed at the Federal level and in South Dakota, Florida, and Maine, and
- 1984, by when South Dakota, Florida, Maine, Wisconsin, and the Federal Government had all initiated significant regulatory reforms.

Rural Areas Served Better After Regulatory Reform

The number of small communities served by trucking companies fell between 1976 and 1982 (table 1). This decline is primarily attributable to a decline in the number of New Mexico communities receiving service because of carrier bankruptcies. However, the number of small communities served by trucking companies rose over the longer time period 1976-84. In 1984, all 50 of the sampled communities in four of the States were served, including those in three States that had relaxed their regulatory controls. The evidence suggests regulatory reform has not hurt service to rural communities.

The average number of carriers providing interstate service to the sampled rural communities increased between 1976 and 1982 in seven of the eight States (table 2). Between 1976 and 1984, the average number of carriers offering interstate service rose in all eight States. The percentage increase in the average number of interstate carriers was greatest in two States that deregulated their intrastate motor carrier service as well—Florida and Wisconsin.

Table 1—Sampled communities with trucking service

State	1976	1982	1984
	Number of communities		
Reformed:			
Florida	50	50	50
Maine	50	50	50
South Dakota	44	44	43
Wisconsin	49	48	50
Not reformed:			
Minnesota	43	41	39
New Mexico	40	29	45
Ohio	48	50	50
Texas	38	43	46

Note: 50 communities per State were included in the sample.

Source: *National Highway and Airway Carriers and Routes.* Fall issues of 1976, 1982, and 1984.

Table 2—Average number of interstate motor carriers serving each rural community rose after regulatory reform

State	1976	1982	1984
	Number of carriers		
Reformed:			
Florida	3.3	10.1	10.6
Maine	5.4	5.5	6.2
South Dakota	1.4	1.5	2.4
Wisconsin	2.3	3.3	7.0
Not reformed:			
Minnesota	1.4	2.0	3.1
New Mexico	1.2	1.0	1.9
Ohio	7.5	10.4	10.7
Texas	1.9	3.6	3.4

Source: *National Highway and Airway Carriers and Routes.* Fall issues of 1976, 1982, and 1984.

About the Study

For each State, we selected a random sample of 50 rural communities with populations of fewer than 2,000 persons. Any community contiguous to a major metropolitan area or classified as being in a commercial zone was excluded from the sample.

The *National Highway and Airway Carriers and Routes* (NHACR) guide was used to determine the number of carriers offering to provide service to each sampled community in the fall of 1976, 1982, and 1984. The guide also reports whether the carrier provides interstate service, intrastate service, or both.

The guide provides a measure of the advertised service offered a community. Other carriers not listed in the guide may also serve these communities. Not all of the carriers listed in the guide may actually provide their advertised service.

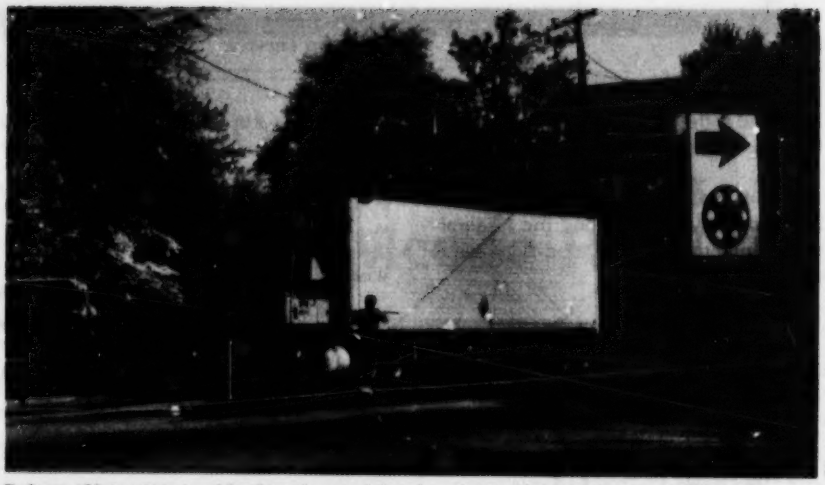

Photo by J. Norman Reid

Reform of interstate trucking laws lowered barriers in serving rural communities, many of which now boast of better trucking service than before.

Table 3—Average number of intrastate carriers serving rural communities was less affected by regulatory reform

State	1976	1982	1984
	Truckers/community		
Reformed:			
Florida	0.6	1.5	2.4
Maine	2.0	1.8	1.8
South Dakota	1.0	1.0	.9
Wisconsin	.8	.7	1.3
Not reformed:			
Minnesota	1.1	.8	.8
New Mexico	1.1	.4	.4
Ohio	1.6	2.2	2.1
Texas	1.1	1.0	1.2

Source: *National Highway and Airway Carriers and Routes.* Fall issues of 1976, 1982, and 1984.

By the fall of 1982, Florida, South Dakota, and Maine had relaxed intrastate regulations. Between 1976 and 1982, the average number of intrastate carriers serving the sampled communities rose by 150 percent in Florida, remained the same in South Dakota, and fell slightly in Maine (table 3). In the five States that had not relaxed their regulations, four suffered declines in average intrastate service ranging from 10 percent to 64 percent.

Results are similar if we compare 1976 with 1984. In the four States that had relaxed regulation by 1984, service rose by 300 percent in Florida and by 62 percent in Wisconsin but fell by 10 percent in Maine and South Dakota. In the four States that did not relax their intrastate regulations, average levels of service rose by 31 percent in Ohio and 9 percent in Texas but fell by 36 percent in Minnesota and 64 percent in New Mexico.

Results from Intrastate Deregulation Not So Dramatic

Reform of Federal trucking regulation promoted interstate service to the sampled small rural communities. In all eight States, the average level of service, measured by number of carriers, increased from 1976 to 1984, the increase ranging from 15 percent in Maine to 221 percent in Florida.

The evidence is less clear for intrastate service. Regulatory reform apparently promoted dramatic increases in some States but had little effect in others. Communities in States that reformed their regulations have apparently done somewhat better than communities in States that did not reform. For example, deregulation appears to have led to a major improvement in intrastate service in Florida and Wisconsin. Florida communities had the worst intrastate service among the eight States in 1976 (table 3); in 1984, they had the best. The average level of intrastate service to Wisconsin's sampled small communities rose by 60 percent from 1976 to 1984, an increase in service second only to Florida's. The average level of service to the sampled Wisconsin communities, which was second worst in 1976, rose to fourth best in 1984. On the other hand, Maine and South Dakota both suffered small declines in average service levels from 1976 to 1984.

Among the States that did not reform their regulations, Texas, Minnesota, and New Mexico all tied for the third-best ranking of intrastate service in 1976. In 1984, their rankings fell to fifth, seventh, and eighth.

Intrastate service to communities in States undergoing regulatory reform improved compared with the other four States. In 1976, the average level of service to communities in States that would undergo reform was 1.1 carriers per community; in 1984, communities in those States were served by an average of 1.6 carriers per community. In States that did not reform, the average level of service was 1.25 carriers per community in 1976 and fell to 1.12 carriers per community in 1984.

Some of these differences in levels of rural community services between reform and nonreform States might be attributable to factors other than regulatory reform. Economic growth, as measured by personal income, was higher in the four reform States than in the four nonreform States. Average growth in real personal income in the nonreform States of Texas, New Mexico, Minnesota, and Ohio from 1976 to 1983 was 29 percent (data for 1984 were unavailable). In the reform States, average growth in real personal income was 35 percent. A similar pattern between the two groups of States holds for employment growth.

Some of the difference in the change in service between reform and nonreform States might thus be attributable to differences in the growth of demand for transportation services. However, the relatively small difference in growth in rural personal income or employment appears to be insufficient to explain all of the differences in the changes in rural community service between the two groups of States. Nor does it appear to explain the decline in average level of service in the nonreform States.

Regulatory Reform Seems To Be Working

This evidence, therefore, suggests that Federal regulatory reform of interstate trucking seems not to have reduced service to the Nation's rural communities. On the contrary, the average level of inter-

state service increased in all eight States. This result is not surprising in view of the ICC's apparent policy of benign neglect toward small rural communities. Prior to deregulation, the ICC did not actively regulate service to rural communities. The service that was provided appears to have been offered on a voluntary basis in the expectation of making a profit. The passage of the MCA lowered the regulatory costs of entering small community markets, and thus encouraged new entry into such markets.

Other research has reached similar conclusions. The ICC explored the impact of the passage of the MCA on service to small, isolated communities in 1982. Of the firms surveyed, 13.1 percent said service availability had increased, while only 1.7 percent said availability had declined. The remainder reported no change. Similar results were obtained for questions concerning ontime delivery and freight losses, though some deterioration in the settling of loss claims was reported.

The ICC examined the effect of the MCA on the number and types of small community service complaints it received. It found a decline in both the number of small community complaints and the proportion of complaints coming from small communities.

The ICC also assessed how the MCA affected rates charged in small communities. Before passage of the MCA, rates generally did not vary by community size. After its passage, rates were generally less for small communities than for large communities. The ICC concluded that regulatory reform gave small-community shippers a slight rate advantage over shippers in larger communities.

Likewise the U.S. Department of Transportation in 1981 concluded that "shippers...in these [small] communities are satisfied with their overall service, and that trucking service has not deteriorated since the passage of the [MCA]."

Relaxation of intrastate regulation also appears not to have harmed motor carrier service to the sampled rural communities. As a group, communities in States that have undergone regulatory reform gained motor carrier service relative to their counterparts in States not undergoing reform. Most noticeable was deregulation in Florida. Deregulation in Florida appears to have led to major improvements in intrastate small community service. This finding is somewhat stronger than the results of surveys of Arizona and Florida shippers, which indicated little change in the intrastate services offered to rural shippers and receivers as a result of deregulation of intrastate traffic.

On the other hand, regulation is not necessarily inimical to rural communities. Ohio's rural communities appear to receive superior intrastate service. They may receive this high-quality service because many carriers are free to serve whatever rural communities they choose: a typical operating authority authorizes a carrier to transport goods between point A to any other point in Ohio. Thus the carrier is free to construct a route network that ties point A and whatever other points in Ohio that the carrier can profitably serve, including, of course, rural communities.

* * *

These results, particularly with regard to Federal regulation, may be surprising in light of the concerns raised by some agricultural and rural communities. Why were their fears not borne out? They may have placed too much faith in regulation as a protector. On paper, the ICC guarded the interests of rural communities. In reality, the carriers normally established rates free from ICC interference. Moreover, carriers who nominally had an obligation to serve a rural community generally were free to disregard their obligations. Only if a complaint were filed did the ICC intervene in these business decisions of the carriers.

Federal regulation thus did not provide significant benefits to rural communities. But it did create barriers to serving them. A carrier considering offering trucking service would have to weigh the costs of filing an application and prosecuting its case through the ICC's bureaucracy against the profits it would earn if it received the route authority. In the face of these high transactions costs, some carriers would choose not to bother. Regulatory reform dramatically lowered the cost of obtaining approval to serve a market. As a result, more carriers have entered rural markets to the benefit of the communities. RDP

Background on Trucking Regulation

Federal regulation of interstate trucking service was inaugurated with the passage of the Motor Carrier Act of 1935. The Interstate Commerce Commission (ICC) was given the task of controlling entry and exit into interstate trucking markets and the prices charged in these markets. Most States passed similar laws in the 1920's and 1930's, delegating regulation of their intrastate trucking industries to various State regulatory agencies.

The 1970's brought a reappraisal of the role of regulation in the economy. Regulatory reform of interstate trucking was initiated by the ICC in 1977. The Motor Carrier Act of 1980 (MCA) ratified and extended many of the ICC's reforms. The MCA relaxed Federal control over entry into interstate trucking markets. Before MCA, a shipper had to prove that its entry into a new market would serve the public interest. After MCA, that responsibility was shifted. The party, generally another carrier, protesting a new entry application, had to prove that the grant of authority was not in the public interest. MCA also granted carriers increased pricing flexibility, but left existing safety regulations intact. In passing the MCA, Congress judged that the free market, rather than regulation, was the better provider of interstate trucking service.

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Matthew G. Smith

Can Farm Policy Help Small Farmers?

Small farmers are a diverse group, ranging from part-time hobbyists with good off-farm jobs to full-time operators. For small farmers who earn insufficient income, general rural development policies, not necessarily farm policies might be the best method to help them.

Two very different ideas about small farms have become common in recent years, affecting our perceptions of the best way to solve their problems.

One view stems from the traditional supposition that small farmers have been steadily overtaken by large, often corporate, farms during the past 50 years, and that the Nation's remaining small farmers represent the hard-pressed survivors of a vanishing American breed. This view emphasizes small farmers as farmers, compares them with larger neighboring operators, and uses words like "low income" or "limited resource" to describe them. As a consequence, small farm problems are seen in the context of traditional farm policy, and traditional responses such as commodity and credit programs are advocated, sometimes with the twist that they be "targeted" to small farmers.

Another image of small farmers has gained wide circulation more recently. It emphasizes the off-farm activities and income of small farmers, with the farming operation seen as a hobby at best or a tax dodge at worst. This view uses words like "hobby," "residential," "sundown," or "weekend" to describe small farms, and they are seen chiefly as a form of recreation. Consequently, problems encountered by the operators are not deemed worthy of public interest.

Which of these views is closer to the truth? Should the old image of small farmers as farmers now be abandoned in favor of one that sees them as affluent hobbyists? Not completely. Many small farm operators continue to fit the traditional image, and do suffer income problems. Yet census data suggest that most of these farmers are unlikely to be helped significantly by traditional farm policy. A better approach may lie in nonfarm rural development that aids all rural residents, farm and nonfarm alike.

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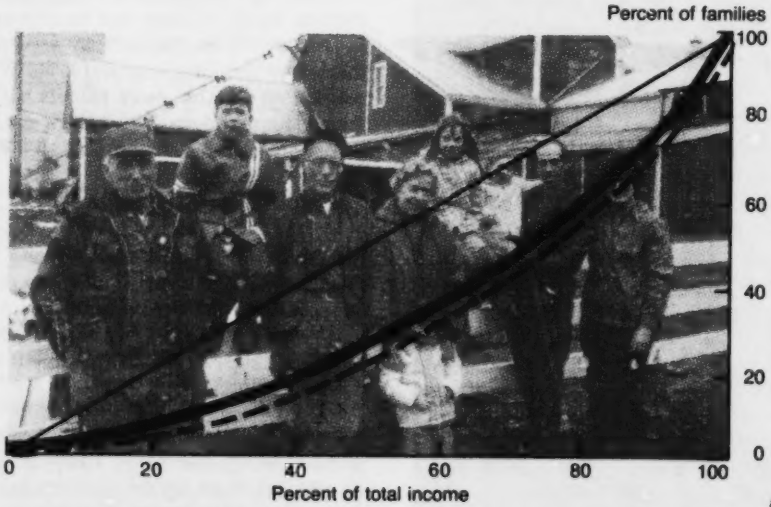
All Small Farms Are Not Equal

Small farms can be defined in many ways. Some definitions focus on the farm's resources, such as acres of land, or the gross value of farm products sold. Others focus on the farm family's income regardless of the size of the operation, defining a "small" farm as one with a low total income. Because the purpose here is to examine the validity of generalizations that proceed from farm size to operators' motivations and income, I define a small farm as one with annual sales of less than $20,000.

Such small farms far outnumber larger U.S. farms, constituting over 60 percent of all farms in 1982. Despite their great number, however, small farms contribute little to national farm production: just over 5 percent of the total value of products sold. And most small farm operators have experienced net losses on their farming operations in recent years, with all their net income coming from off-farm sources. Moreover, off-farm income has recently been high enough to give the average small farmer a total income significantly higher than the average mid-sized farmer.

While the total income of small farmers as a group is relatively high, it is distributed more unevenly than incomes of all rural families generally (fig. 1). Approximately 50 percent of small farmers earned less than 20 percent of the group's total income, and the remaining half earned more than 80 percent.

Figure 1
Total family income on small farms is distributed unevenly



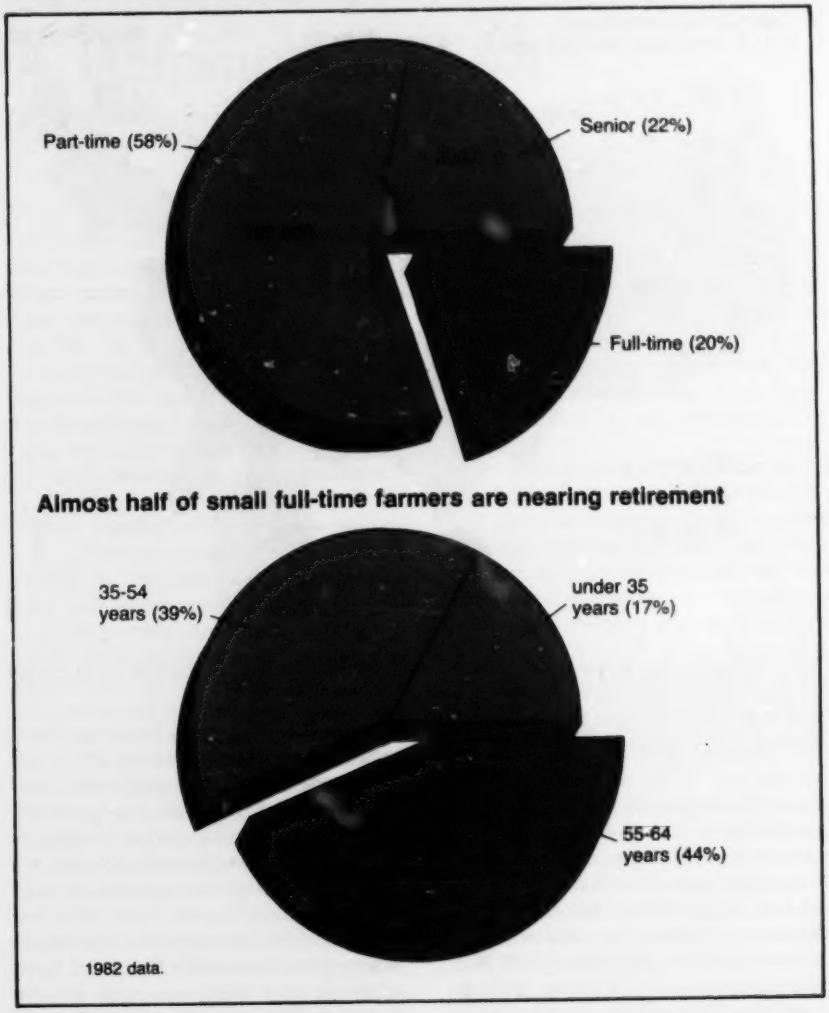
1979 data (most recent available).
Source: Rural families data from 1980 Census of Population.
Small farm data from 1979 Farm Finance Survey.

This type of graph, known as a Lorenz Curve, shows how total income is distributed among families. Each curve plots the percentage of income versus the percentage of families receiving it. A perfectly even distribution, with 10 percent of the families earning 10 percent of the income, 70 percent earning 70 percent, etc., would follow the 45 degree line. In this case, the "drooping" data lines indicate that total family income is distributed somewhat unevenly, and that small farm families have a more uneven distribution of total incomes than rural families generally.

The unequal distribution of income suggests that small farmers can be divided into distinct subgroups. Two factors have surfaced in virtually all studies as being useful reference points: the farm operator's age and extent of off-farm employment. With nearly all net income coming from off the farm, the bulk of it in wages and salaries, time spent working off the farm is a good proxy for income. And age is a good indicator of retirement and the range of future choices available. These factors provide insight into small farm operators' reliance on farming for their income, the extent to which they are likely to suffer low incomes, the alternatives available to them for improving their on- or off-farm incomes, and the kinds of policies through which income problems might be addressed most effectively.

I grouped small farmers into three types by age and off-farm employment. Part-time farmers are less than 65 years old and work 100 days or more per year at an off-farm job. Full-time farmers are younger than 65 and work fewer than 100 days off the farm. Senior farmers are over the age of 65, regardless of whether they work off the farm (fig. 2).

Figure 2
One in five small farmers is full time



Senior Farmers—Like Retirees

About 300,000 small farms had senior operators in 1982, 22 percent of all small farms. Over half of all senior operators live in the South, and another third live in the North Central States (fig. 3). Seniors make up the highest proportion in the South, where about one in four small farmers is 65 or older.

Senior operators tend to have the lowest total family incomes, much of it coming from social security and other retirement payments, although their small household sizes make their per-capita incomes somewhat higher. Senior farmers tend to rely on public and private income programs that reflect their age and past employment. Thus, senior operators seem to have more in common with other elderly persons and retirees than with younger commercial farmers, and measures aimed at raising the incomes of these families might address them more effectively as retirees rather than as farmers.

Part-Time Farmers—Rely on Strong Local Nonfarm Economy

About 780,000 small farms had part-time operators in 1982, 58 percent of all small farms. Just under half of them were in the South. One of every three U.S. farmers is a small part-time operator, and one in six is a small part-timer living in the South.

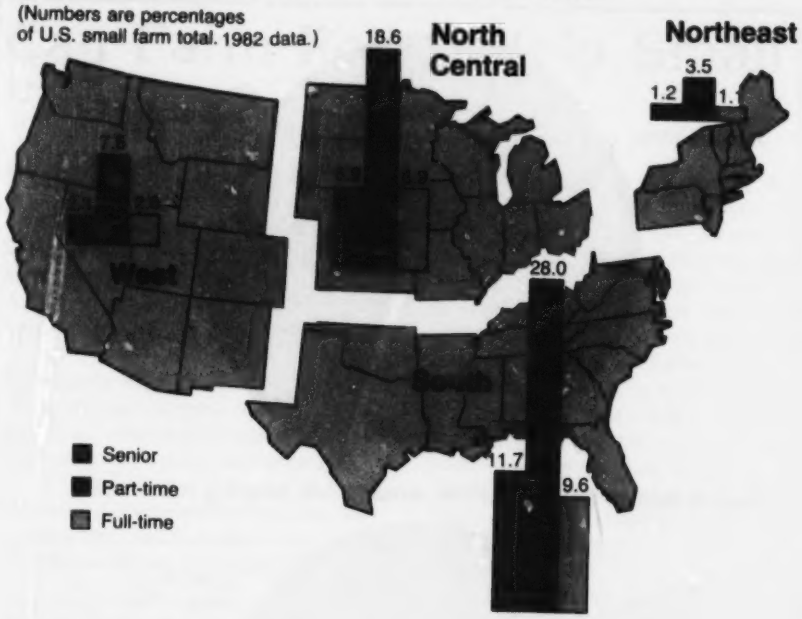
Part-time operators have the highest incomes of all small farmers, most of it derived from off-farm employment. In 1979, off-farm jobs provided small farmers approximately 73 percent of their total nonfarm income. Survey data also indicate that when the operator works at least 100 days per year off the farm, small farm families have a much greater likelihood of a high total income than families in which the operator works off-farm fewer than 100 days. Part-time farmers tend to operate somewhat smaller farms and are less likely to earn a positive return from farming than either senior or full-time farmers.

Small part-time farmers, as a group, earn high incomes compared with other small farmers and farmers generally, and the farming operation plays a largely supplemental, in some cases even recreational or aesthetic, role in the family's well-being. And where part-time farmers do have income problems, the best solution may lie in the nonfarm sector rather than on the farm.

Full-Time Farmers—Can Farm Policy Help?

The remaining 20 percent (273,000) of small farmers were defined as small full-

Figure 3
Most small farms are in South, North Central States



time operators. The distribution of small full-time farmers by region is similar to that of all small farmers, with nearly half located in the South.

To put these figures in better perspective, small full-time farmers represent over 12 percent of all U.S. farms—a group larger in size than the entire 249,000 farms with sales of $20,000-$40,000, and roughly 80 percent of the number of all farms with annual sales of $40,000-$100,000. Thus, despite the appearance given by some aggregate statistics, there remains a large number of full-time small farmers in the United States, particularly when viewed in comparison with the "mid-sized" farmers that have recently received so much attention.

It is among full-time small farmers that income problems are most often found. Off-farm incomes are typically lowest on these farms, and although the farming operation is usually somewhat larger and more likely to generate a positive return, the total incomes of full-time operator families average the lowest of the three groups. This is the group of farmers whom policymakers seem mainly to have in mind when addressing small farm income problems. Yet, even within this group the differences are great enough to call into question the effectiveness and appropriateness of typical farm policy measures.

Among full-time small farm operators, age is an important influence on a farmer's range of options for improving either farm or off-farm income. Younger farmers frequently have the most alternatives. The relatively long worklife still ahead of them makes education and training to increase off-farm income more attractive than for older operators. In some cases, young farmers can still look forward to increasing their farm size and income through borrowing or inheritance. However, in the near term, even younger operators face difficulties in improving their farm income in the current depressed agricultural conditions, or in generating off-farm income in local economies that are often highly dependent on agriculture.

Middle-aged operators not already working off the farm face more difficulties. With a shorter remaining worklife ahead of them and frequently greater family responsibilities, these farmers are often not in a position to take full advantage of retraining for nonfarm jobs. Also, farmers who continue to operate a small farm into their middle years are unlikely to expand their operation later, particularly in the current economic environment. Thus their range of options for improving total income is more limited.

Of the 259,000 small full-time operators identified in 1982, 114,000 (44 percent) were between 55 and 64 years old, 101,000 (39 percent) were aged 35 to 54, and the remaining 44,000 (17 percent) were under 35 years old (fig. 2). While the South has the largest concentration of small full-time farmers, the North Central region has the largest number under the age of 35. This may reflect some combination of relatively higher expectations of farm inheritance and recent slower growth in off-farm employment opportunities in the North Central States than in the South.

Broader Rural Development Effort May Be Better Approach

While many small farm operators appear to fit the traditional image and are likely to suffer income problems, they are not likely to be helped much by traditional farm policies. Commodity programs aimed at increasing farm prices, for example, are often justified on the basis of helping small farmers. Yet, total production on small farms is so low that slightly higher prices do not greatly affect their total net income. Farm programs targeted to small operators, such as subsidized credit to expand operations, are not likely to be much help to farmers nearing retirement age; about half of all full-time small farmers are 55 or older. Similarly, training programs for off-farm work are likely to be attractive only to the minority of younger operators able to take the fullest advantage of them.

Small farmers are a diverse group. Some still fit the old image of the struggling family farmer, but most do not. Some of them are indeed affluent professionals indulging a taste for rural life, but most are not. Although small farmers as a group have high average incomes compared with other farmers, nearly all of it from off-farm sources, it is distributed unevenly. Some groups of small farmers have very low incomes; they are frequently middle-aged operators, with little or no off-farm employment, and retired persons relying on social security and other retirement payments.

About 20 percent of small farm operators are full-time farmers, under 65 and working off the farm fewer than 100 days per year. These farmers, mostly located in the South and the North Central States, tend for the most part to be older and nearing retirement age. Fewer than 20 percent of

small full-time farmers are under the age of 35.

A better understanding of the problems of low-income small farmers may lie in viewing them more in the context of the rural nonfarm economy rather than the commercial farm sector. Problems facing senior operators living on retirement benefits are akin to problems facing all the elderly, whether farmers or not. Similarly, younger and middle-aged operators, whether working full-time off the farm or not, might be viewed in the context of the overall rural labor market. They divide their time between farm and nonfarm work according to the opportunities available in each sphere. The fact that so many of them continue to rely on farming despite very low earnings indicates limited alternatives off the farm, particularly for older workers with few marketable skills.

Adjusting the reference points from which we view small farmers could have advantages for developing both sound rural development and commercial agricultural policies. The rural nonfarm economic development effort would benefit from a more widespread recognition that it, rather than a narrow farm policy orientation, is the most effective means by which to reach small farmers needing assistance. Some of the continuing public concern for the welfare of small farmers might then come to focus on the broader rural development effort. And commercial agricultural policy would perhaps be less contradictory, and certainly less costly, if it relinquished some of its pretensions to aiding small farmers. RDP

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Sara Mills Mazie and Herman Bluestone

A Helping Hand for Displaced Farmers

Many farmers have had to give up farming in the past few years as economic conditions in the farm sector worsened. More are expected to leave agriculture over the next couple of years. An evolving set of Federal, State, and local government programs is helping these farmers and their families salvage as much equity and dignity as they can and find other ways of making a living. Some of these programs are described here.

The number of farmers now leaving agriculture is not large by historical standards. The reasons they are leaving and their socioeconomic characteristics are different from those that characterized other post-World War II declines in agriculture. In the 1950's and 1960's, many farmers stopped farming because mechanization and lower profit margins in agriculture made small-scale farming unprofitable and because job prospects in urban areas were bright. By contrast, the current difficulties of farmers are the legacy of a dramatic shift in supply and demand conditions in the farm sector.

Stimulative economic policies throughout the world and domestic farm programs inflated the demand for farm commodities and U.S. farmland in the 1970's, and encouraged a global overexpansion in agriculture. This was followed in the 1980's by a sharp decline in the demand for and price of U.S. farm commodities and farmland, brought on largely by an abrupt shift in domestic fiscal and monetary policies. (See the article in this issue by Kitchen and Zahn.)

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This article draws on an unpublished paper, "Public Policies for Displaced Farmers and Their Families," prepared by the Agriculture and Rural Economics Division of ERS.

Most of the Nation's financially troubled farmers are among the 700,000 who sell more than $40,000 of farm products yearly. They account for almost 90 percent of all farm sales. Nearly half of the financially stressed farms are located in nine States: Illinois, Indiana, Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin.

Most displaced farmers are under 45 years of age and have larger than average farm households. They and their spouses are better educated, have more off-farm work experience, and are more likely to have a family member working off the farm than the average farm family. As operators of small businesses, farmers have many different and useful skills, ranging from mechanics to agronomy, finance to marketing. Thus, most farmers currently being displaced from agriculture appear better prepared to compete for jobs in the nonfarm sector than farmers displaced in earlier outmovements from agriculture and workers displaced from other industries, such as manufacturing. With the right kind of assistance, many of the displaced farmers can find satisfactory jobs outside of agriculture. To help them make a successful transition to nonfarm jobs, these farmers and their families need:

- Counseling, moral support, and legal and technical assistance to help them adjust to their new personal and family circumstances and make better decisions in selling their farm assets.
- Financial assistance to provide income until they can obtain work in the nonfarm sector.
- Skills assessment and job search assistance to help them prepare for and find appropriate work.

Most of the Federal programs established to provide these kinds of help for displaced workers have been designed for wage earners rather than for self-employed persons like farmers. Using ex-

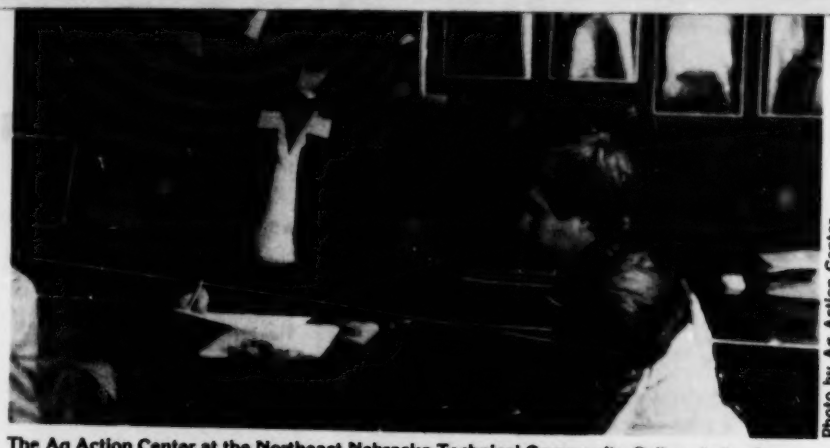

Photo by Ag Action Center

The Ag Action Center at the Northeast Nebraska Technical Community College helps farmers assess their skills for off-farm work. This center, and others like it, also offers training, counseling, job placement to farmers caught in the crunch.

isting programs to assist distressed farm families is often difficult. State and local governments, however, are playing an increasingly important role in helping farm families make use of these Federal programs. They also have created some new programs and enlisted the support and help of many State and community institutions.

Personal Aspects of Adjustment

Giving up the farm can be exceedingly painful for many farm families, whether the decision is forced by a lender or made voluntarily by the family. The problem is not entirely financial. Shame, guilt, disbelief, feelings of inadequacy, a sense of worthlessness often accompany the loss of a farm, especially one that has been in the family for generations. Even though such feelings are usually temporary, they can inhibit coping effectively with a difficult financial situation.

To help displaced farmers and their families overcome these feelings and gain the self-confidence they need to make a good transition to the nonfarm sector, State and local governments and community organizations, especially in the Midwest, have worked together to establish a host of special programs. Hotlines, support groups, and counseling programs are letting displaced farm families know that people care, that others are experiencing the same things, and that it is possible to get over them.

In many States, hotlines provide callers a sympathetic ear and information on the legal and financial aspects of foreclosure and liquidation. In Iowa, for example, trained "peer listeners" from the community provide families moral support as well as information on financial and legal matters and sources of additional help. In Missouri, the Cooperative Extension Service operates a similar program working with an interfaith coalition of clergy.

In North Dakota, financial analysts, often farmers with experience in credit and finance, are working with farmers in financial stress to help them realistically assess their status and identify viable options. In Illinois, lawyers are donating their services to help farmers needing legal counsel sort out questions of foreclosure and bankruptcy. And the list goes on.

The diversity of institutional arrangements that have sprung up to assist displaced farmers reflects the fact that most of these farm families must cope with a large set of problems that no single organization can handle. The adjustments of displaced farm families may be more numerous and difficult than those faced by displaced wage earners because, in addition to finding a new job, they must liquidate farm assets and may lose social status in their communities.

Not only are many different kinds of programs needed to help the farmers leaving agriculture, but the programs need to be coordinated. From this need have formed coalitions made up of several different kinds of organizations. In Nebraska, for example, church groups, educational institutions, advocacy groups, lenders, and attorneys have combined to establish a response network. In North Dakota, the Extension Service has teamed up with the Human Service Centers, the State Mental Health Association, and the State Job Service. And, in Minnesota, the Extension Service works with the Attorney General's office to maintain a hotline for stressed farm families.

Providing Financial Bridges

Some displaced farmers need financial assistance—a financial bridge—as they make the transition to new jobs. Traditional Federal income transfers provide little assistance of this kind, subjecting farmers to a sense of urgency that urban wage earners are less likely to experience. Displaced farmers, since they own assets and were self-employed, do not qualify for most of these programs. And unlike many displaced industrial workers, they get no help from a union.

Retirement and income maintenance programs are the two types of programs most likely to be helpful. Since 1954, farmers have been covered by Social Security, the principal retirement program, and most can receive benefits if they are 62 years of age or older. But while Social Security will help older displaced farmers, most are less than 60 years of age.

Federal income maintenance programs include unemployment insurance and public assistance. Displaced farmers, as self-employed workers, do not qualify for unemployment insurance because eligibility is based on previous employment with a covered employer.

Farm families with little or no income or assets may qualify for public assistance programs such as Supplemental Security Income, Aid to Families with Dependent Children, and Food Stamps. But the income and asset limits of these programs make many displaced farmers and their families ineligible because they own too many assets. For example, Food Stamp regulations require that nonelderly households own less than $2,000 liquid assets (cash, saving accounts, securities, or IRA's) and certain nonliquid assets. In calculating assets, some farmers stay under the limit by excluding farmland and machinery necessary for farming. But displaced farmers, particularly those in the midst of bankruptcy proceedings who legally own but don't control their farm assets, may find they cannot meet the asset test.

Help in Obtaining New Jobs

Dislocated worker programs (Title III) authorized by the Job Training Partnership Act (JTPA) are the main source of help for displaced farm families trying to

land new jobs. While federally funded, these programs are developed and administered at the State and local level and tailored to local circumstances. As victims of displacement due to structural changes taking place in agriculture, displaced farmers are eligible for assistance under these programs. Some States also allow farmers suffering severe financial stress but still farming in a limited capacity to participate in the programs. Low-income farmers may be eligible for assistance through economically disadvantaged worker programs (Title II A) under JTPA.

Dislocated worker programs vary considerably from State to State but tend to emphasize helping participants recognize and assess their talents and then learn how to find a job that uses them.

Program services include personal and career counseling, skills assessment, formal training, and job search skills. Most States will reimburse employers up to half the wages of on-the-job trainees for 6 months. No stipends are available to those in classroom training but supportive services such as child care, transportation, and counseling are available to some participants.

Reaching out to displaced farmers is an important element of most of the programs. Often carried out with the help of existing organizations, such as the Cooperative Extension Service, with links to the community, these outreach activities are designed to encourage farmers to learn about and take advantage of available programs. For example, in Michigan, 12 JTPA-supported county extension staff work in communities to identify dislocated farm families and farmworkers and then help them obtain appropriate testing, counseling, education, and jobs.

Sometimes, just getting an out-of-work farmer through the door is tough. Lifelong habits of self-reliance and independence deter many farmers from accepting assistance through traditional Federal employment programs. To make programs more physically and psychologically accessible, many States have set up their dislocated workers' programs in familiar surroundings, such as at community college campuses or vocational-technical schools.

The principal dislocated worker programs under JTPA are designed to provide services to all eligible dislocated workers, whether urban or rural, wage earner or self-employed. Found in all States, they are supported by JTPA block grants. While dislocated farmers are eligible to participate in the programs, not many have. Those who do often find the programs geared to the needs of urban industrial workers, lacking the kinds of services farmers need, and therefore not very helpful.

Many States are trying to change that situation by using the Secretary of Labor's discretionary fund for dislocated workers to establish programs specifically designed to help displaced farmers. Although the discretionary funds are limited, 11 States, most in the Midwest, have initiated such programs.

These programs are tailored to fit farmers' needs. They provide job development services like skills assessment, classroom and on-the-job training, resume writing, and interviewing skills. Because dislocated farmers tend to be long on skills but short on recognizing them and how they can be used outside of farming, the programs emphasize confidence building, assessing skills and interests, and developing job search skills.

With support from the discretionary fund, Nebraska has established a dislocated worker program open to displaced or financially distressed ag-related workers and farmers. The product of a statewide planning effort, the program taps a full range of State resources, both public and private. It benefits from a diversity of services, minimizes duplication of services, and increases efficiency. Delivered through six ag action centers located at community colleges, participants can take advantage of a full range of services, including assessments to measure abilities, interests, and physical tolerance; counseling; entrepreneurial workshops; job placement; and traditional skill training.

Some bankrupt, foreclosed, or low-income operators still farming may be eligible for assistance under JTPA's programs for the economically disadvantaged. Eligibility is based solely on income. These programs can include many of the activities found in the dislocated worker programs, but tend to emphasize remedial education and basic skills training. While they may offer useful services, these programs are generally designed for persons with limited skills and work experience, are less responsive to the needs of displaced farmers, and therefore, are of less value to them.

Programs established specifically to help farmers move into the world of off-farm employment hold the most promise.

* * *

The distress caused by having to leave farming and the feelings of failure often associated with this forced exit are real. After a lifetime of farming, just making and accepting such a decision is often painful. Beyond that point, whether a farmer is forced out by a lender who can no longer carry a delinquent loan or voluntarily leaves because of the handwriting on the wall, moving on to nonfarm employment can also be difficult and wrenching. Helping displaced farmers and their families make this transition, then, is one of the most important ways government can ease the stress they experience.

What they need is a network of services to help them get out of farming with as little emotional trauma and as many assets as possible, help in finding a new and appropriate job in the nonfarm economy, and perhaps some temporary financial assistance in the interim. And to be really helpful, the services should be tailored to the special circumstances of farmers, people who have skills but little knowledge about how to apply them in nonfarm endeavors.

Over the last couple of years, the public has become more aware of the problems of dislocated farmers and a service network has begun to develop. Across the country, programs have sprung up to help families adjust to the loss of their farms and to help them adapt their skills to new jobs. Financial assistance between jobs is less available. This service network continues to grow as States and communities find creative ways to draw on the strengths and resources of their institutions. More time will be needed to fine-tune the programs to the particular needs of displaced farmers. But the response thus far has been encouraging. RDP

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Vera J. Banks

Who Make Up the U.S. Farm Population?

It seems like it should be a truism—the farm population is the people who live on farms. And it used to be. But now, many people who live on farms don't work there and many people who work on farms don't live there; even the farm operator often lives elsewhere now. Here are some alternative ways of identifying farm people.

Farm people are generally thought of as persons living on farms. At the beginning of the 20th century, when the country was chiefly agrarian, most farm residents also worked on farms. Thus, equating farm residence with farmwork posed few problems. But now, many people who live on farms work elsewhere and many people who work on farms live elsewhere.

Farm residents today, in fact, are just as likely to have a nonfarm job as a farm job. This weakening relationship between farm residence and farmwork can be illustrated with a few statistics: in 1982, about 1 out of every 5 farmers did not live on their farms; that was true for only 1 out of 20 in 1940. And more than four-fifths of all hired farmworkers now live off the farm, compared with less than a third in the mid-1940's.

Despite those changes, the Nation's current farm population statistics still reflect the traditional residential separation of farm and nonfarm households. They have not caught up with agriculture's changing demographics. But accurate information is needed. Programs designed to serve farmworkers, for example, would fall far short of reaching their target population if they reached only those living on farms. Likewise, producers and sellers of farm equipment and supplies would miss many potential buyers if they limited their advertising and marketing to farm residents.

To try to come up with a broader identification of people associated with farming, rather than just those who live on farms, in this article, I describe some alternatives on the basis of residence, occupation, and income. Using special tabulations from the March 1983 Current Population Survey (CPS) of the Bureau of the Census, I show how these alternatives compare with one another as well as with the standard definition of farm population.

What we see is that all the alternatives considered have some shortcomings and that, while one or another may be better for some purposes, no one definition is so clearly superior to the others that we can conclude that it and it alone best describes the U.S. farm population.

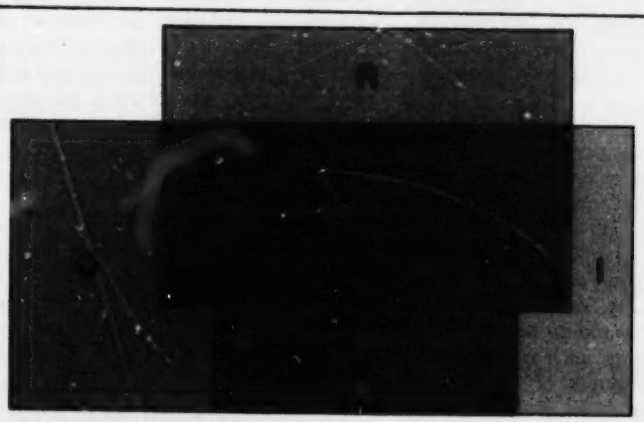
The Alternatives

The standard definition of the U.S. farm population is the ***farm resident population,*** defined as all persons living in households on farms regardless of occupation or income.

An alternative definition is the ***farm occupation population*** defined as all persons living in households where at least one member is employed in a farm-related occupation, whether as farm operator, farm manager, or farmworker. A household is also included if at least one unemployed member indicated their last full-time job was in one of those farm-related occupations. This definition avoids a problem of the standard definition, since it requires that someone in the household is in the labor force and working, or last worked, in farming. There is no residence requirement. Thus, it captures the large population in nonresident operator and—especially—hired farmworker households. But it has a major shortcoming in that although the data are available monthly from the CPS, employment refers only to a respondent's principal occupation (the activity performed the most hours during the survey week). Thus, it identifies households only when someone works solely or primarily as a farmer, farm manager, or farmworker. Thousands of households with farming as a secondary activity are excluded, by definition.

A second alternative is the ***farm income population,*** defined as all persons in households where at least one member receives some farm self-employment income—that is, net money income (gross receipts minus operating expenses)—from the operation of a farm on one's own account, as an owner, a renter, or a sharecropper. Again, there is no residence requirement. This definition avoids a problem of the standard definition by eliminating households where no one is involved in farming. Although farm operators are the main recipients of farm self-employment income, gross receipts from

Farm-related populations show heavy overlap



R—Farm resident population only
O—Farm occupation population only
I—Farm income population only
RO—Farm resident *and* farm occupation population
RI—Farm resident *and* farm income population
OI—Farm occupation *and* farm income population
ROI—Farm resident *and* farm occupation *and* farm income population

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farm self-employment include more than the money value of agricultural products sold. Other income sources, only marginally associated with the operation of a farm, are included such as receipts from rental of farm equipment to others, receipts from the sale of wood, sand, gravel, and so forth.

A major shortcoming of this definition is that it excludes households whose members receive earnings only from farm wage and salary jobs. Such cash earnings are not considered as income from farming, thus the definition excludes many hired farmworker families unless the household also has a member receiving some farm self-employment income. Another drawback is that the data needed to identify the farm income population are available only once a year. Using such data would introduce more sampling variation than in the residential and occupational data collected monthly.

A third alternative is the ***total farm-related population,*** defined as all persons in farm-related households, which encompasses farm residence, farm occupation, or farm income. This definition avoids a problem of the standard definition in that all households involved in farming are included in this composite. A shortcoming is that this definition too inherits a part of the inability to identify households with farming as a secondary activity. Households on farms with farming as a secondary occupation are included, but most such households are not on farms. And, because the farm income population is one of the three components, the total farm-related population can be derived only annually.

The Farm Resident Population

The number of persons living on farms peaked at 32.5 million in 1916, just before the entry of the United States into World War I. The farm resident population has declined almost steadily since then, except for brief interruptions during the Great Depression and following World Wars I and II. Lowered labor requirements in agriculture, increased employment opportunities in nonagricultural industries, and the unfavorable disparity between farm and nonfarm income fostered this decline. Another factor was the trend toward smaller families.

According to the March 1983 CPS, 5.6 million persons lived in farm resident households (table 1). The largest share of the farm resident population is in the Midwest. The South, once the most populous farm region, ranks second. Relatively small percentages of farm residents are in the West and Northeast.

In contrast to earlier years, farm residents no longer account for most agricultural employment. In March 1983, farm residents made up only 44 percent of all agricultural workers. As recently as 1970, 63 percent of the agricultural work force lived on farms.

Families living on farms average lower incomes than those not living on farms: $18,800 versus $23,700 in 1982. Farm resident families are also more likely than nonfarm families to be poor: 19 percent of farm families had incomes below the poverty level, compared with 15 percent for nonfarm families.

The Farm Occupation Population

In March 1983, 7.4 million persons lived in households with at least one person in a farm occupation (table 1). The farm occupation population is the largest of the alternative farm-related populations. The largest share of the farm occupation population lives in the South. The difference between this population's regional distribution and that of farm residents is due to the concentration of farmworker households in the South and West. Regional variations in the number of farm-

About the Study

This article presents a brief description of research underway in the Population Section, Economic Research Service, U.S. Department of Agriculture. The larger study is a more detailed analysis of population characteristics and the overlaps and differences in the alternative definitions. A fuller description of the results of that research, conducted by Vera J. Banks, Judith Z. Kalbacher, and Margaret A. Butler, will be issued later.

Table 1—Status of farm-related populations, March 1983

Characteristic	Total	Farm-related population: Farm resident	Farm occupation	Farm income
		Thousands		
Total persons	11,283	5,611	7,379	6,276
		Percent		
Region:				
Northeast	7.1	5.6	8.0	6.1
Midwest	34.4	45.4	31.7	42.5
South	38.8	35.0	38.0	36.4
West	19.7	14.0	22.3	15.0
		Thousands		
Total families	3,164	1,617	1,910	1,774
		Percent		
Family income (1982):				
Under $2,500 or loss	5.8	7.5	7.9	8.3
$2,500 to $4,999	3.0	3.7	3.8	2.5
$5,000 to $9,999	13.9	13.8	16.1	11.0
$10,000 to $14,999	14.5	14.0	17.5	12.3
$15,000 to $19,999	13.9	14.2	15.1	13.6
$20,000 to $29,999	22.2	22.5	20.4	22.2
$30,000 to $39,999	13.4	13.8	9.1	15.1
$40,000 and over	13.3	10.5	10.1	15.0
		Dollars		
Median family income	19,600	18,800	16,700	20,900
		Percent		
Families below the poverty level	18.3	18.6	24.2	16.7

workers depend primarily on the dominant types of farming and length of growing and harvesting seasons in an area. The South and West produce a large proportion of the Nation's fruit and vegetable crops, which require large numbers of workers for production and harvest. High proportions of hired workers also characterize the old plantation areas still found in the lower South. The Midwest has the largest share of farmers—over two-fifths, but accounts for only a fourth of all farmworkers.

As expected, the farm occupation population has a different employment pattern than the farm resident population whose work force is divided about equally between farm and nonfarm jobs. By definition, each household in the farm occupation population has at least one member with a farming occupation. In March 1983, two-thirds of all employed persons in this population worked solely or primarily in farming.

The concentration of hired farmworkers in lower income categories causes farm occupation families to have a median income about an eighth lower than that of farm resident families. About a fourth of farm occupation families live in poverty.

The Farm Income Population

In March 1983, the population living in farm income households totaled 6.3 million (table 1). The regional distribution of this population, with more than two-fifths in the Midwest, closely resembles that of the farm resident population. In contrast to the farm occupation population, workers in the farm income population are somewhat more likely to be involved in nonfarm than farm jobs: 52 percent reported nonfarm employment in March 1983. With half of the families having an income of $20,000 or more, median income is higher among farm income families than either farm resident or farm occupation families.

The Total Farm-Related Population

The inclusion of all farm-related households (residence or occupation or income) results in a maximum total farm-related population of 11.3 million persons (table 1). This level has not been observed in the traditional farm resident population since the mid-1960's. But even defined this broadly, the total farm-related population still represents only a small part of the national total—5 percent.

Table 2—Groups in the farm-related population

Type and household description	Number of persons	Example of typical household
	Thousands	
R—Farm resident only	1,521	Live on farm. Principal occupation—nonfarm or retired.
O—Farm occupation only	2,972	Live off farm. Principal occupation—farmworker, commute.
I—Farm income only	1,565	Live off farm. Secondary occupation— farm operator, commute.
RO—Farm resident and farm occupation	515	Live on farm. Principal occupation—farmworker.
RI—Farm resident and farm income	816	Live on farm. Secondary occupation—farm operator.
OI—Farm occupation and farm income	1,133	Live off farm. Principal occupation—farm operator.
ROI—Farm resident and farm occupation and farm income	2,759	Live on farm. Principal occupation—farm operator.

The regional distribution of the total farm-related population resembles that of the largest alternative, the farm occupation population. Its employment pattern, with slightly more persons working in nonfarm jobs, is similar to that of the farm income population. And its income and poverty levels are close to those of the farm resident population.

What types of households and people make up the total farm-related population? Does one of the identifiers contribute significantly more to the total than others? Identities and explanations of the various components of the total farm-related population are summarized in table 2.

The total farm-related population is about equally divided between farm and nonfarm residents (5.6 million versus 5.7 million, respectively). The two major components in the total farm-related population are the people living off farms in hired farmworker households (O), and the people living in farm operator or farm manager households on farms (ROI). Each of these components accounts for about a fourth of the total. The populations contributing the least to the total are both found on farms: in households where a member is solely or primarily a farm wageworker (RO), and in households where the operator is mainly employed at nonfarm work and farming is the secondary activity (RI). These two populations combined account for only a tenth of the total farm-related population.

With so many different components, there are obviously overlaps within the total farm-related population (see figure). In each of the alternative farm-related populations, the greater part of the total overlaps another. Within this overlapping area, the largest portion is that shared by all three alternatives (ROI). The proportion of the population living in ROI households ranges from more than a third of the farm occupation population to half of the farm resident population.

The greatest overlap between any two of the alternatives is between occupation and income (OI). This reflects the fact that farm operators and their families make up about half of the farm occupation population and farm operators dominate among persons receiving some farm self-employment income. The least overlap is between residence and occupation (RO). This reflects the fact that the great majority of farm wageworkers, who with their families make up the other half of the farm occupation population, do not live on farms.

A farm occupation is the least likely of the alternatives to be overlapped. Two-fifths of the population in farm occupation

households qualified on occupation only (O). This is not because they are earning no income from farming, but the income received is wages, excluding them from the farm income category.

Alternatives Can Focus on Target Populations

For efficient development and implementation of various programs, such as those administered by the Farmers Home Administration or the Extension Service, government officials as well as various farm organizations (farmer cooperatives, suppliers, and marketers) need information on number, location, and characteristics of farm people. With more and more farm-related people living off farms, we must consider ways of identifying them other than by the traditional means. Policies and programs will be more effectively administered if the targeted populations are well defined. In addition to the traditional farm resident population, the farm occupation population and the farm income population are alternative ways of identifying farm-related people, or the three can be pooled to obtain a composite concept.

Each of the alternative concepts has some shortcomings. They are, however, easy to identify and very flexible. They may be used individually or in various groupings developed to best suit the desired end result. If the purpose of a program or policy is to reach persons involved in farming, whether they live on a farm, work in farming, or receive some farm income, these proposed alternatives identify the target populations. RDP

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John Kitchen and Frank Zahn

Interest Rates, Farm Prices, and the U.S. Farm Sector

What do interest rates have to do with prices for farm products? In a word, everything. It's a roundabout route, but interest rates are a prime factor behind changes in the demand for and supply of farm products. They affect demand, especially foreign demand, through exchange rates and thereby the prices foreigners pay. They affect supply through farmers' costs of production and thereby the price the farmers must get to stay in business.

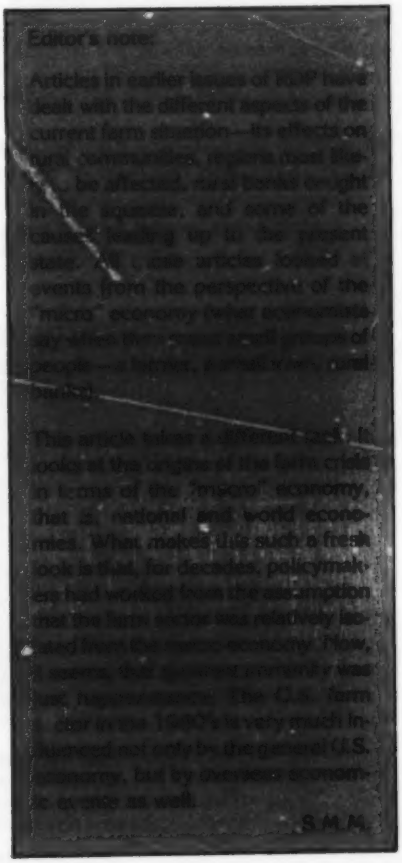
Until about about a decade ago, the farm economy, and hence, a large segment of the rural economy was insulated from forces that affected the overall or "macro" economy—or so everyone thought. When analysts began to realize that maybe it was not so insulated, the connections seemed to be all to the good. Foreign countries were buying as much grain as American farmers could produce and farm incomes soared higher than they had ever been before—or since.

Now that the euphoria of the 1970's has passed, analysts can see that the current farm situation is a direct result of changes in the macroeconomic policies of the 1970's and 1980's. And, the farm sector is linked not only with the national economy, but with the world economy as well. The growth of international trade since World War II and the related emergence of well-developed international credit markets mean that the U.S. economy is an integral part of the global economy. The U.S. economy, including the farm sector, now competes more directly with other countries in world markets.

This article explains how interest rates have been the primary channel for transmitting changes in national and international macroeconomic policy to the U.S. farm sector.

What Is Macroeconomic Policy?

Macroeconomic policy has two basic components: monetary policy and fiscal policy. Monetary policy affects the growth of money available for spending in the economy. It is mostly controlled by the Board of Governors of the Federal Reserve System. Fiscal policy affects total spending directly, through government spending, or indirectly, through the after-tax income of consumers and businesses. It is mostly controlled by the Congress and the President. The objective of both policies is to encourage the growth in total spending in the economy that will pro-



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They thank Jim Malley, David Torgerson, Gerry Schluter, Tom Hady, Herman Bluestone, and Shelley Pendleton for their helpful comments and suggestions in preparing this article.

vide full employment without creating inflationary pressures.

When growth in spending exceeds growth in output of goods and services in the economy, the inflation rate rises. This can be thought of as "too many dollars chasing too few goods." A restrictive macroeconomic policy can reduce growth in spending and reduce the inflation rate. Moreover, when additional spending is financed by borrowing rather than by money creation, nominal interest rates rise. More money in the economy or less borrowing may be required to reduce nominal interest rates.

Because macroeconomic policies influence nominal interest rates and the inflation rate, they also affect the difference between them, namely "inflation adjusted" or "real" interest rates. With a given inflation rate, a fall in nominal interest rates will lower real interest rates while a rise in nominal interest rates will raise real rates. Moreover, with given nominal interest rates, a fall in the inflation rate will raise real interest rates while a rise in the inflation rate will reduce real rates. Understanding these relationships is important because real interest rates play a key role in relaying macroeconomic policy to the farm sector.

What Links Macroeconomic Policy to the Farm Sector?

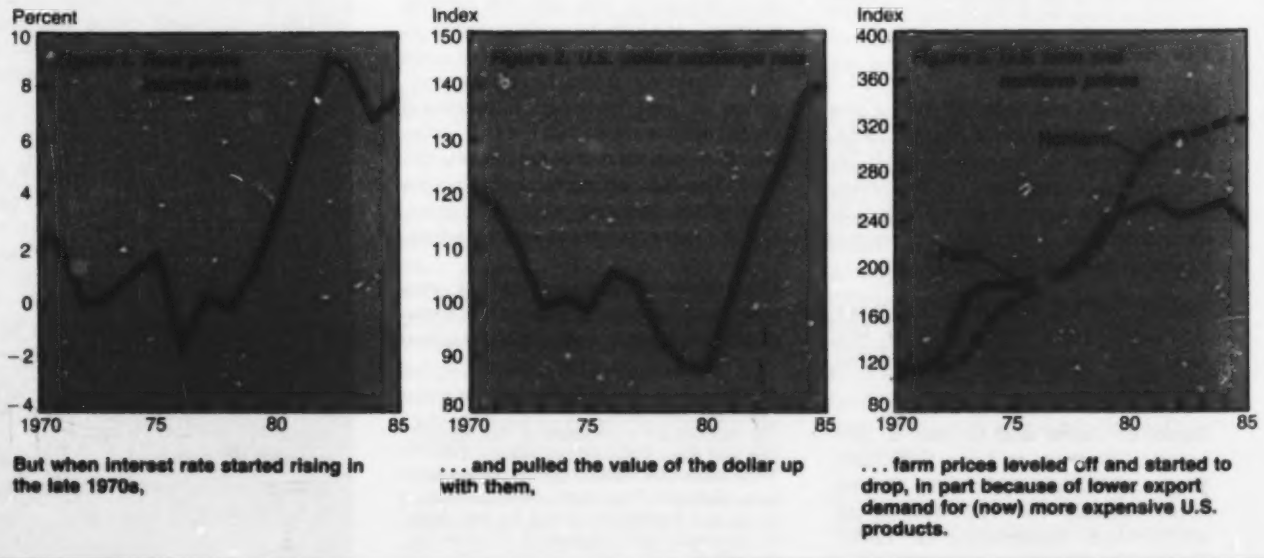
Real interest rates transmit changes in macroeconomic policy to the supply and demand sides of the farm sector. Monetary and fiscal policies primarily influence the total or "aggregate" demand for products in the economy by changing total spending. They also influence aggregate supply by changing costs of production. Aggregate supply and demand interact to determine real interest rates and prices that, in turn, influence the supply of farm products directly by changing costs of farm production and the demand for farm products primarily by changing exchange rates. The supply of and demand for farm products determine farm prices and farmers' income.

Changes in real interest rates affect the demand for farm products under a flexible exchange rate system. When U.S. real interest rates change relative to foreign rates, they affect exchange rates and export demand. For example, when U.S. real interest rates increase, U.S. financial assets become relatively more profitable than foreign financial assets. Foreigners then will demand more U.S. dollars to buy more U.S. financial assets. The increased demand for dollars, in turn, raises the value of the dollar in foreign exchange markets. However, a more expensive dollar reduces foreign demand for U.S. products, including farm products (U.S. exports) and increases domestic demand for foreign products (U.S. imports). Hence, higher real interest rates tend to lead to a higher exchange value of the dollar and U.S. farm products become less competitive in world markets.

Changes in real interest rates affect the supply of farm products by changing costs of production. An increase in real interest rates, for example, raises the costs of credit to finance purchases of new capital, to carry inventories, to finance purchases of inputs such as feeder livestock, seeds, fuel, and fertilizer, and to service variable-interest debt. Just as higher real interest rates increase the value of the dollar and make U.S. farm products less competitive through the demand side of world markets, higher real interest rates also raise costs and make farm products less competitive through the supply side of world markets.

Moreover, farm prices are more flexible than other prices, so they adjust more quickly to economic changes. For example, when an expansionary monetary policy puts upward pressure on prices, farm

How macroeconomics contributed to the farm boom of the 1970s and the bust of the 1980s



prices at first increase more rapidly than other prices. In this situation, farmers tend to produce more than will clear world markets when prices again stabilize. In contrast, in the absence of price supports contractionary policies would push prices down, leading farmers to produce too little. This "overshooting" of farm prices lends credibility to the argument that macroeconomic policy should be formulated with an eye on the disproportional impact of policy on the farm sector in the short run.

What Happened During the 1970's and 1980's to the Farm Sector?

The markets for farm products were relatively stable during the 1950's and the 1960's. Government regulation of credit markets and macroeconomic policy promoted low and stable real interest rates, which stabilized costs of production on the supply side of markets for farm products. Moreover, international monetary policies maintained fixed exchange rates, which helped stabilize the demand side. Beyond the underlying stability created by a stable macroeconomic environment, Government price supports ensured that farm prices would not fall below an "unreasonable" level in case of substantial shocks to either the demand or supply sides of markets for farm products.

The stability of the 1950's and early 1960's gave way to boom and bust in the 1970's and the 1980's. Beginning in the mid-1960's the growth in economy-wide spending began to exceed the growth in the capacity of the economy to produce. There was not only rapid growth in private sector spending but government spending as well. The growth in spending was supported by the Federal Reserve's pumping more money into the economy. The late 1960's and 1970's demonstrated that when spending persistently outweighs the ability to produce, inflation results.

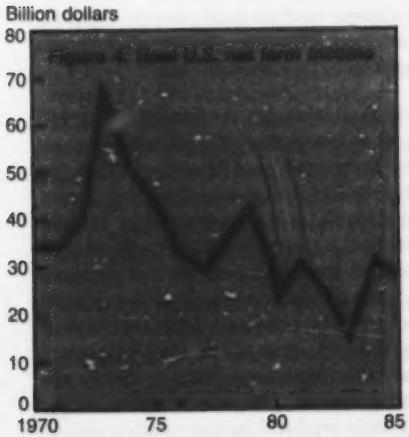
Additional factors helped increase prices of farm products. In the early 1970's several short crops overseas reduced world stocks of farm products. Moreover, income growth in Third World economies increased the demand for food. As a result, demand for U.S. farm exports increased dramatically and prices of farm products soared, more quickly than other prices.

As the inflation rate increased in the 1970's, nominal interest rates did not adjust enough to offset the higher inflation rate. As a result, real interest rates fell (fig. 1). With low and even negative real interest rates in the United States, the demand for higher yielding foreign assets increased. The shift from U.S. dollars into foreign currencies brought downward pressure on the value of the dollar (fig. 2).

As the value of the dollar fell, the purchasing power of foreign currencies rose and foreigners demanded more U.S. products, including U.S. farm products. Abundant credit, at low real interest rates, promoted growth in exports to developing countries as well. The increase in farm export demand forced farm prices up—faster than prices of other products (fig. 3)—and U.S. farmers responded with substantial increases in farm production. The increased demand for farm products and the general increase in demand for real assets (to serve as hedges against inflation) increased the demand for, and prices of, farmland. Rising farm equity served as additional collateral for credit, which farmers used to finance capital investment to increase production.

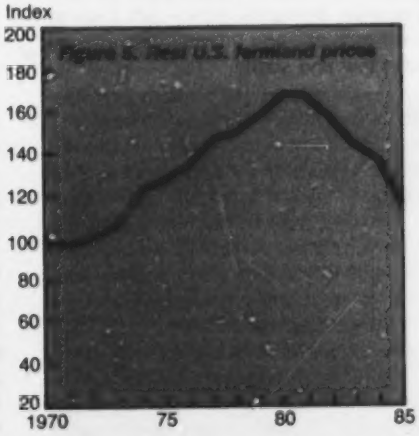
The expansion of demand for farm products in the early 1970's brought prosperity to the farmer, but it soon gave way to contraction and despair for many farmers in the 1980's. Although the trend

. . . and pushed farmers' income up, too.



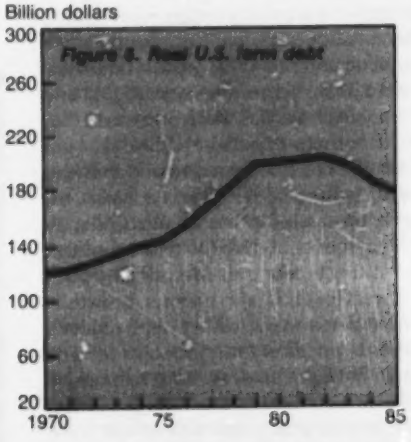
And farmers' income slipped.

Favorable farm prices and rising farm income stimulated demand for farmland, pushing its prices higher as well.



All these events caused farmland prices to slump,

And with farmers buying more farmland, total farm debt also rose.



. . . leaving many farmers with high levels of debt outstanding at now higher interest rates on farmland no longer worth what it was bought for.

Photo by J. Norman Reid

Profitability of Iowa corn farms hinges on macroeconomic forces, especially interest rates and exchange rates.

of nominal net farm income, including government payments, has been relatively flat since the late 1970's, the dramatic increase in both net farm income (fig. 4), between 1970 and 1973 set off a period of farmland speculation that left many farmers heavily indebted in the 1980's. Rising farmland prices during the 1970's (fig. 5) and rising interest rates during the late 1970's and into the 1980's (fig. 1) meant farmers needed increasing amounts of cash to meet current obligations. The growth in farm debt, particularly debt on farmland (fig. 6), and failure of net cash income to continue growing as it had during the early 1970's made it extremely difficult for some farmers to service their debt and to continue their farm operation.

The Federal Reserve initiated, in late 1979, a major change in policy designed to curb inflation. The Fed brought the growth in spending into line with growth in the economy's output by reducing the growth in the money supply. As a result, the inflation rate fell, the gap between nominal and real GNP growth rates narrowed, real interest rates rose (fig. 1) and the value of the U.S. dollar increased (fig. 2). The more expensive U.S. dollar cut short the rise in export demand that had begun in the early 1970's. In addition, rising interest rates increased the debt service payments of Third World countries. Since these countries are prime growth markets for U.S. farm exports, growth in export demand fell further. With reduced exports, prices of farm products fell and again farm prices were more responsive than other prices to the change in macroeconomic policy, this time on the down side (fig. 3). In a free market, prices and quantities supplied would have declined enough to balance supplies with current demands for farm products. But, government price supports prevented much of the adjustment in the 1980's, so the surpluses persisted.

Later, in the 1980's, the Federal Reserve eased monetary policy once it became convinced that inflationary pressures had subsided. And in response, both nominal and real interest rates again fell. However, because of continued growth in government, as well as private, borrowing, nominal interest rates in the early 1980's were at historically high levels. More than any other factor, high real interest rates eroded the competitive advantage of U.S. agriculture in world markets. If there had been no large deficits, monetary policy could have been much easier, real interest rates lower, the value of the dollar lower, and U.S. economic growth and foreign economic growth larger—which all could have meant larger farm exports, higher real farm prices, and, in time, less downward pressure on farmland prices. The current efforts of the Congress and the President to reduce the Federal deficit, the fall in oil prices, and accommodative monetary policy will help to keep nominal, and thereby, real interest rates low and stable.

On the supply side of the agricultural markets, U.S. farm output continued to grow in the 1980's as farmers continued to respond to government program incentives rather than to market signals. So large surpluses persisted. Ample farm commodity stocks in conjunction with high interest rates created downward pressure on farm prices. Historically high interest rates for farm loans also resulted in higher operating costs for farmers as the cost of acquiring and servicing credit increased. Lower prices and higher production costs combined to depress net farm income (excluding government payments) in both nominal and real terms. Government payments continue, however, to help maintain nominal net farm income, although the trend of real net farm income (including government payments) continues to fall (fig. 4).

Prospects for U.S. Agriculture

Expansionary monetary policy has been particularly important in explaining the recent decline in U.S. interest rates relative to foreign interest rates. In response, the value of the dollar has fallen against other currencies and, with a lag, there should be further improvement in our balance of trade as exports rise and imports decline.

While the value of the dollar is important in assessing changes in export demand, it is not the only factor. Foreign income is also important. Income growth in Third World countries stagnated in the 1980's as their debt burdens rose. In response, these countries have had to constrain imports because their foreign exchange earnings have been used to repay debt. This situation will probably not improve much in the near future, so the outlook for increased exports to such countries is not encouraging in the short run.

Another factor constraining U.S. farm exports is increased foreign production of farm products, which has taken a larger share of the world market. Technology and productivity improvements have allowed more nations that used to be importers to become self-sufficient and even exporters in some years. India and China, for example, with their large populations used to be large importers of agricultural products, but have recently become more self-sufficient. Trade restrictions, such as those imposed by the European Common Market, also restrain growth in U.S. exports.

The near term export outlook is not bright and large supplies will tend to keep commodity prices low. However, from the macroeconomic perspective, the general outlook for the farm economy is now the best it has been in several years. Fiscal and monetary policies that promote continued income growth in the general economy and low and stable real interest rates are together the best hope for a *sustained* farm recovery. Not only do low and stable interest rates improve the demand for farm products by encouraging growth in exports, they also improve the supply of farm products by holding down farm costs. These factors will help improve the competitive advantage of U.S. farm products in world markets. RDP

Deborah M. Markley and William M. Park

Can Rural Recycling Centers Work? Some Answers From Tennessee

A rural recycling center in Tennessee's Grainger County (population 16,000) has been helping the county get rid of its solid waste since 1983. The center buys aluminum, glass, paper, and other materials from county residents and resells them for reuse by industry. The center does not yet pay its own way. Some of its operating costs come from county funds and some startup costs were financed by the Tennessee Valley Authority. Not all benefits are of a kind that show up in an accountant's ledger, however.

In February 1983, a recycling center began operations in an abandoned school building in Grainger County, TN. The center originally accepted only paper, glass, and aluminum. But, as resale markets were identified, the center also accepted copper, plastic, brass, batteries, and radiators. In the 21 following months, the center purchased 233 tons of recycled materials, paying about $20,000 for them and selling them for about $31,000.

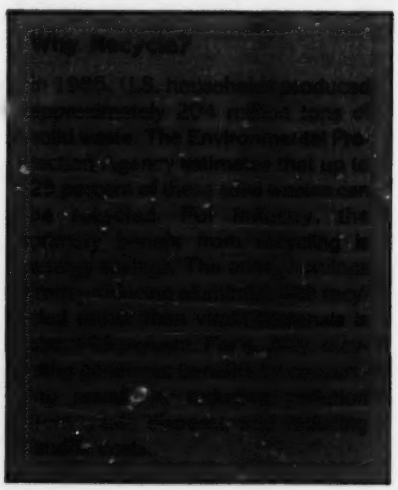
Grainger County's recycling center is remarkable mainly because it is located in a rural area. Rural recycling is often thought to be impractical because of the small volume of recyclable materials generated in such areas (because of small population base and low population density) and because of the distance from markets for recyclable materials, typically located in more urban areas.

Rural recycling facilities, whether private or municipal, are in fact few. Of 67 nonmetropolitan Tennessee counties (each less than 25,000 population), only 23 had recycling facilities that accepted aluminum cans as of January 1984, and only 10 had a facility that accepted something other than aluminum cans or scrap metal, such as glass or paper.

But, rural recycling can generate benefits by reducing the volume of waste and thus the cost of waste disposal in a landfill, by reducing roadside litter and improving the area's appearance, and by providing a source of supplemental income (though quite small) for local residents. Not all rural municipalities can operate an efficient recycling program, but some can. Facts presented here may spur some rural officials to investigate the possibilities in their own areas.

Startup of Grainger County's Recycling Center

In 1982, the Tennessee Valley Authority (TVA) allocated funds to establish demonstration recycling projects in rural parts of its region. Three projects are currently operating in Grainger County and Waynesboro, TN, and Athens, AL. Planning for three more centers is underway in Boone, NC, Columbia, TN, and Hopkinsville, KY.



In February 1983, Grainger County's center began operations. The center was started with funds from a State litter abatement grant and technical and financial assistance from TVA. An important factor in getting the center started was the innovation and energy of the litter grant coordinator, Jim Heimburger. Rather than use prisoners to clean up roadsides and then recycle some of the materials, his idea was to give county residents a financial incentive to collect materials from roadsides and from their own refuse for recycling. With support from county executive Norman Acuff, Heimburger approached TVA for funds. TVA provided $27,000 for Grainger County to purchase equipment and serve as a demonstration project for rural recycling. The center began by purchasing only paper, glass, and aluminum. Other materials were added as supplies developed and resale markets were identified. The center now recycles seven types of materials, including copper, brass, batteries, and radiators.

In this article we discuss three aspects of Grainger County's experience with recycling: general descriptive data on the operations of the center over a 21-month period (March 1983-November 1984); the center's economic feasibility; and the potential for expanding the center with a satellite substation in another part of the county.

Between March 1983 and November 1984, the center purchased 466,152 pounds (233 tons) of recyclable materials. Glass and paper constituted the greatest volume of materials, while aluminum cans accounted for approximately half of total payments (fig. 1). The center paid $20,421 to county residents during this period and received $26,827 from the resale of materials. In addition, at the end of this period, the center had an inventory of purchased materials valued at $4,924 (November 1984 prices). Incorporating this inventory value, the gross return from sales for the 21-month period was $11,330.

A total of 670 individuals, or 4 percent of the total county population, participated in the recycling program, making an average of 2.5 trips to the center over the 21 months. Average payment per participant was $30, ranging from less than $1 to $568, with the distribution as follows: 69 percent of the participants received $25 or less, 16 percent received between $25 and $50, 9 percent

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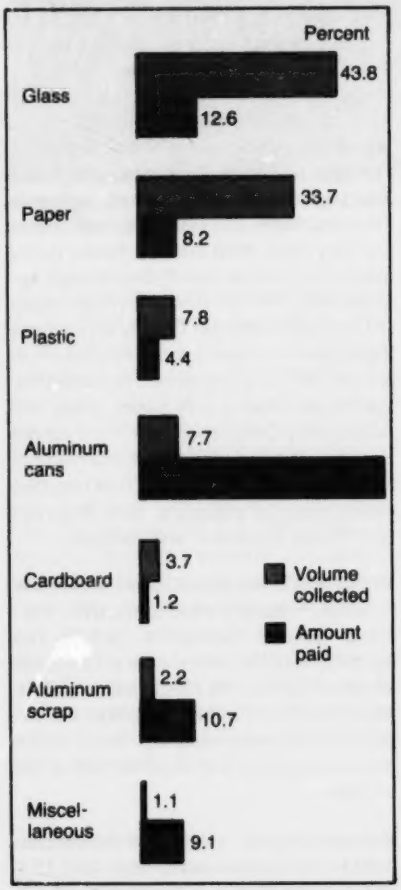
Figure 1
Glass and paper account for three-fourths of volume collected, aluminum for two-thirds of payout



received between $50 and $100, and 6 percent received more than $100. Thus, for most individuals, the supplemental income generated from recycling was relatively small. However, for some low-income individuals, income from recycling may represent a helpful addition to cash income.

But why did those who earned relatively little bother at all? Several explanations are possible. First, people may feel that recycling is a good thing to do. Recycling makes them feel good about doing their part to conserve resources and protect the environment. A second related reason would be to clean up roadsides littered by others. Again, the incentive to recycle is not monetary, but the satisfaction gained from improving the local environment. Third, recycling projects may be undertaken by civic groups to raise money for specific projects. Fourth, farmers may clear their fields and recycle the materials as a way of avoiding possible damage to equipment during fieldwork. There is a monetary incentive involved in the last two cases, but neither involves significant amounts of money.

Grainger County consists of five divisions (see map inset). We collected data on participation by residents in each division to determine how distance from the center influenced recycling activity. The Blaine and Rutledge divisions, closest to the center, accounted for 85 percent of total recycling trips, 84.6 percent of total materials recycled, and 83 percent of total payments received. In addition, per capita payment was highest for residents of the Rutledge division, roughly 8 miles from the center, and declined as distance from the center increased (fig. 2). Distance, therefore, does seem to be an important factor influencing a resident's involvement in recycling.

Participation in the recycling program changed over time. Payments from recycling were low during the first quarter (March to May 1983) of operation, increased through the next four quarters (June 1983 to May 1984), and declined in the final two quarters (June to November 1984). The initial period of slow growth reflects people's growing awareness of recycling and the center's operation. The growth period reflects increased awareness of recycling, as well as a drawing down of the inventory of recyclable materials in the county. During this period, people were likely clearing roadsides and dumps of accumulated materials and bringing them to the center. Once this backlog of materials was collected, payments leveled off, as waste generation and recycling balanced one another. Based on these observations, monthly payments from recycling in Grainger County could be expected to remain in the $1,000-$1,200 range as long as prices remain at the levels during the fourth and fifth quarters.

The price paid to participants for aluminum cans appears to be an important factor in recycling payouts. This price went from 20 cents per pound in the first quarter to 36 cents per pound in the fourth quarter, then down to 26 cents per pound in the last quarter. Subsequently, the price of aluminum fell to 22 cents per pound (June 1985) and rose again to 28 cents per pound in March 1986. In addition to the price of aluminum, seasonal factors, such as critical labor times for agricultural enterprises in the area, also appear to influence participation and payments. Competition for labor hours as a result of these agricultural enterprises may reduce recycling activity.

Without Public Funds, Center May Run in the Red

To estimate the net returns for the center, we have to consider some of its unique characteristics. First, the county provided the building and land used for the recycling center (an abandoned schoolhouse) at no cost. Second, the manager's salary came from a State grant. Third, a grant from TVA paid for the original equipment used to establish the center. Thus, the net return estimates for Grainger County cannot be used to draw general conclusions. We adjusted these returns to represent a more typical situation (table 1).

Gross returns from sales for Grainger County averaged $540 per month over the 21-month period. The representative center was assumed to process the same volume of materials, so gross returns are the same. Amortized capital costs for the equipment purchased by TVA were estimated to be $272 per month and were included only for the representative center. Actual monthly equipment maintenance expenses of $21 were included for both Grainger County and the representative center. Labor expenses for

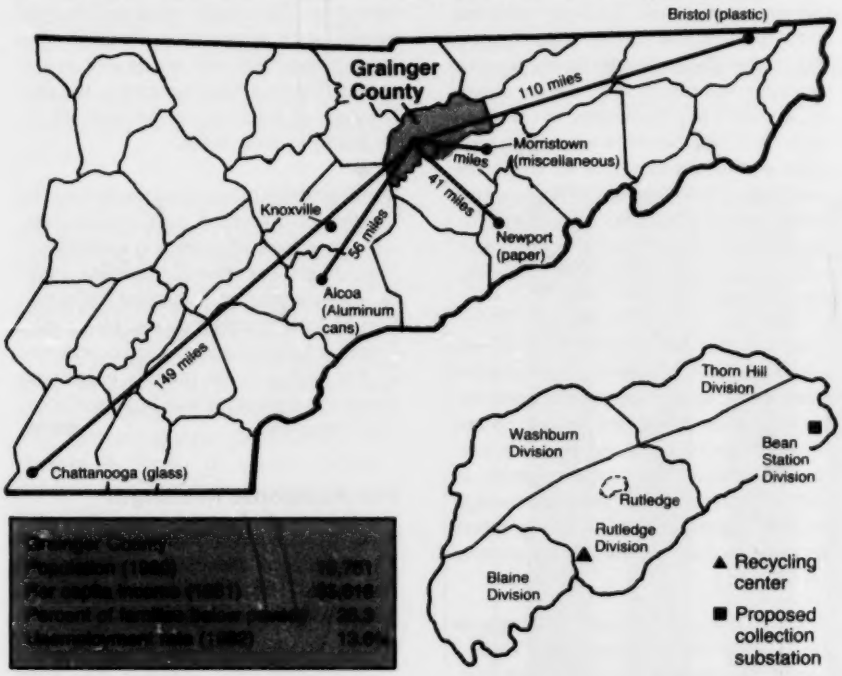
Table 1—Recycling doesn't turn a profit without public funds

Item	Grainger County recycling center	Representative recycling center
	Dollars	
Gross returns on sales	540	540
Operating costs:		
Equipment maintenance	0[1]	272
	0[1]	21
Labor:		
Supervisor	0[2]	867
Part-time	290	290
Land and building rent	0[2]	450
Utilities	54	54
Transportation	28	28
Total	393	1,982
Net returns from operation	147	−1,442

[1]Provided by TVA.
[2]Provided by Grainger County.

Figure 2
The farther people have to go, the less likely they are to recycle

Figure 3
Markets and collection area for Grainger County's recycling center



the representative center were based on the actual part-time labor used in Grainger County, plus an estimate of the cost for a full-time supervisor. Utility costs were actual figures from Grainger County and averaged about $54 per month. Transportation costs (for all materials except glass, which was picked up by the buyer) were estimated to be $28 per month for the average amount of materials hauled to market.

We estimate that the representative recycling center would incur a net loss of about $1,442 per month, compared with a net profit of $147 per month for Grainger County's recycling center. These results highlight the importance of innovation and commitment at the county level in finding solutions to solid waste problems.

Recycling Saves County Money by Reducing Waste at Landfill

If a private firm were to consider the economic feasibility of a recycling center, the costs and returns described above would be the only ones considered. Those costs, however, do not take into account the cost savings to the county associated with the reduced amount of waste to be collected and disposed of.

The national average cost per ton of waste disposed of in a landfill was estimated to be $30 in 1976. This figure is based primarily on urban collection and disposal systems, which generally operate at higher cost than rural systems. Grainger County's landfill had total operating costs of $84,424 in 1982-83. We estimated annual capital expenses to be an additional $33,492, based on other studies conducted in the Southeast. Using TVA's assumption that 1.8 pounds per person per day of solid waste are collected in rural areas, we obtained a cost per ton of $21. Given the uncertainty surrounding this estimate, we used a range of waste collection and disposal costs of $20-$30 in calculating the cost savings to the county.

The recycling center processed 11.1 tons of materials each month, reducing the volume of solid waste sent to the landfill by approximately 2.5 percent, at an estimated cost savings in the range of $222-$333 per month. Including this cost saving would suggest the Grainger County recycling center generated positive net returns of $368-$479 per month, while the loss incurred by the representative recycling center would have been reduced to $1,109-$1,220 per month. Though the cost savings from reduced landfill use may not be evident or recognized in the county's immediate cash flow, it is no less real. In addition, extending the life of the existing landfill will postpone developing proposals, securing approval, and other costs associated with starting up a new one.

A recycling center can provide other benefits to the community. Grainger County residents received some additional income, although small, from recycling and the two additional jobs created at the

center. Other benefits, although more difficult to quantify, include a cleaner landscape, which may enhance the county's appeal as a recreation area, and reduced risk of spontaneous fires and air pollution from open dumping and burning.

More, and More Convenient, Collection Centers to Improve Volume of Materials Collected

Grainger County is establishing a system of attended convenience centers for waste collection that will replace the existing dumpsters located throughout the county. Each center has an attendant and is located at a convenient point in the county in terms of existing traffic patterns. These centers might also serve as collection points for recyclable materials in the more remote parts of the county by having the attendant collect and weigh the materials and provide payment. Recycled materials could then be transported to the recycling center as needed.

We estimate that a recycling substation in the Bean Station division (see map) would increase total payments by about $781 per month. The costs of establishing a substation would be minimal, as the primary need would be for a scale. Even including additional costs for transporting materials, a substation in Bean Station would generate positive net monthly returns, due in part to economies of size, and would improve the overall economic feasibility of the center. An additional 8.92 tons of materials per month would not have to be disposed of at the landfill, increasing those cost savings. A substation would also increase participation and, thus, some of the intangible benefits associated with recycling, such as increased community pride and spirit and more widespread aesthetic improvements in the county. TVA is developing a mobile collection unit to facilitate recycling. This type of innovation may help improve the effectiveness of rural recycling by taking into account the more dispersed rural populations.

Final Notes

To date, Grainger County's community officials and residents consider the recycling center a success. The center did receive grants and subsidies from the State, the county, and TVA, which enhanced its feasibility and success. A more representative recycling center of similar scale would probably operate with net losses. Nevertheless, Grainger County's experience shows that rural recycling can reduce the volume of materials going to the landfill or littering the rural roadside, thereby saving costs for waste disposal and improving the county's appearance. The center also generated some income through employment at the center as well as payments to participants. In considering a recycling center, a county government and its citizens have to weigh the cost savings from less landfill use and the more intangible benefits of aesthetic improvements and income generation, against the impact on its solid waste disposal budget.

Photo by the author

One step has been ignored up to this point: identifying markets for recycled materials. Unless a center has reasonable assurance that it will be able to sell what it collects, it has no business purchasing those materials from residents. In addition, the price received must be high enough to allow the center to pay prices to residents that give sufficient incentive for recycling.

Despite Grainger County's proximity to the Knoxville metropolitan area (476,517 population), none of the center's five markets was in Knoxville, and their distance from the center ranged from 27 miles to 149 miles (see map). The center has learned, though, what it is like to lose a market and be subject to market price variations. In early 1985, the firm in Bristol stopped purchasing plastic. No alternative buyer has been found. Tons of plastic, which had been purchased from residents before the market was lost, now sit baled outside the center. The drop in aluminum can prices from 1983 to 1985 also affected the center, as volume collected declined significantly. Thus, the manager of a successful recycling operation must be able to identify markets and negotiate price and transportation, as well as oversee day-to-day purchasing and processing of materials.

The success of Grainger County's recycling center is due in part to the initiative of its manager. The recycling center was established and managed by an innovative and energetic individual who pulled together information from a number of sources to establish a successful operation. In addition, the county government supported the operation through donation of the land and building as well as allocating the grant money. This local government support enabled the recycling center to operate at lower cost than would otherwise be possible. Finally, the financial and technical assistance provided by TVA also reduced the startup costs of the operation. Other rural communities considering such an operation should involve local government officials as well as any outside funding organizations in the early stages of determining the feasibility of recycling in their areas.

Rural recycling programs designed for the realities of dispersed rural populations, with some form of collection substations, may enhance economic feasibility greatly. Commercial or industrial collection sites or mobile units may also play a role. Larger volumes ought to yield economies of size and provide greater bargaining power in negotiating with buyers of recycled materials. RDP

For Additional Reading...

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William R. Lassey, Lorna M. Butler, and Vicki Kullberg

Reactions of County Officials to Funding Cuts

Despite funding cutbacks for many programs since 1980, county officials in the State of Washington feel that the most important services have not been seriously harmed. Most county officials see State and Federal requirements as pre-empting local decisions about budget allocations. More than half of the county officials think that their adjustments to reduced funding actually increased the quality and efficiency of county services. Less populated counties were hit harder by cutbacks than the more populated counties. Based on a survey of 214 county officials in eight counties.

Cutbacks in State and Federal assistance, as well as new legal limitations on local ability to raise revenue, have forced local officials in many States to reevaluate the types of services that local government should provide.

In undertaking a survey of county officials (see box), we wanted to find out what was happening in a representative selection of counties in Washington State as a consequence of the budget crunch. Specifically, we hoped to: determine the extent of county public service funding changes from 1979 through 1984; determine the effects of changes as perceived by public officials in eight (of 39) counties, particularly in terms of service priority, quantity, and quality; and examine decision criteria and types of organizational strategies used for dealing with funding changes.

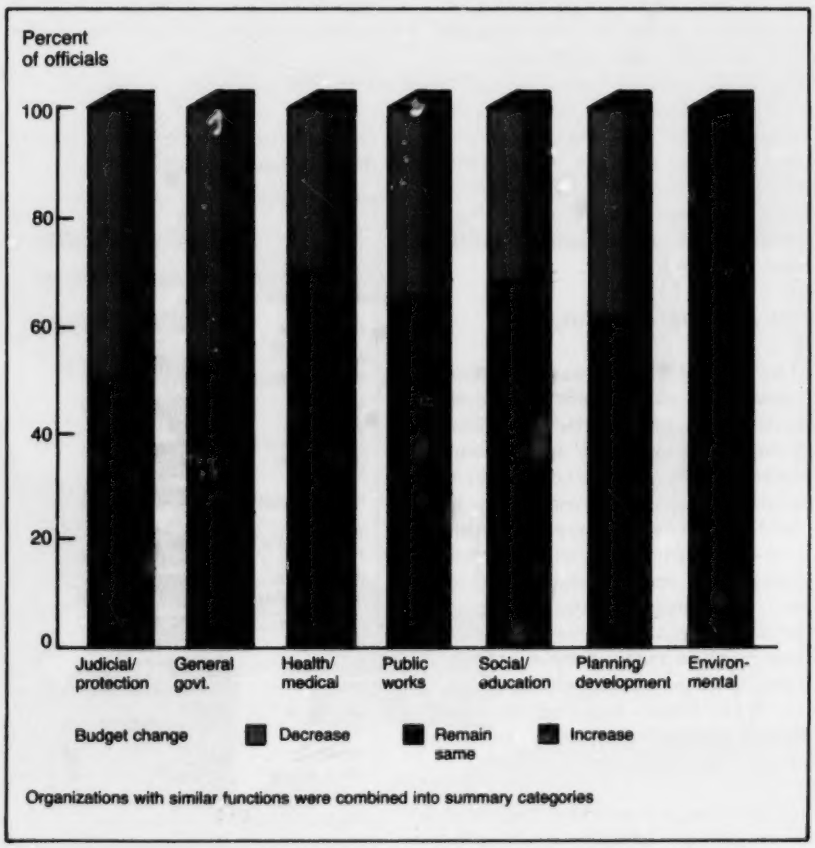
Many of the funding problems are a direct result of State or Federal legislative mandates requiring local governments to provide new services or improve existing activities. In the State of Washington, for example, State legislation requires new or upgraded correctional facilities, and Federal legislation requires local governments (in every State) to help finance more pollution abatement. Despite their merit, both are very expensive.

The distinction between State or federally "mandated" and locally chosen services is critical to understanding the basis for shifting expenditure patterns. Mandated services automatically get first priority for available funds, since local officials have no discretion about whether or not the service is offered, although they may be able to make adjustments in quality or quantity.

Correctional facility standards, for example, are established by State legislation intended to correct seriously inadequate conditions in many local jurisdictions. State funds were appropriated to offset some new construction costs. But part of the initial cost, and all of the operating cost, must be borne by local jurisdictions. This has meant that local officials had no choice about allocating additional resources for jail construction and support. Much of the additional funding, therefore, had to be taken away from "voluntary" programs, such as parks, recreation, environmental protection, and other locally supported activities.

The combined forces of revenue cutbacks and increases in required services have created a fiscal crunch in many

Figure 1
Budget changes in 1984, by function in 8 Washington counties



Organizations with similar functions were combined into summary categories

William Lassey is a rural sociologist and professor of sociology, Lorna Butler is an extension anthropologist, Vicki Kullberg is a research associate, all in the Department of Rural Sociology, Washington State University, Pullman. Support for the research was provided through the Agricultural Research Center and Cooperative Extension. We appreciate the assistance and suggestions of James Barron, Annabel Kirschner Cook, Ron Faas, and Robert Howell. We also thank the graduate students who helped us, especially Gregory Poremba, Glenda Blankenship, and Jeong-Lim Nam.

counties. The situation is particularly difficult when funds are cut for programs that had, until recently, been heavily supported by State or Federal assistance—such as mental health care, planning, and community development.

The problems faced by county governments in Washington State are, in many respects, typical of the national pattern. Our findings may, therefore, serve as a useful case study with applications in other States.

More Cuts Since 1980

County officials reported generally small cutbacks in 1979 and 1980. Cuts were more extensive in the metropolitan counties, affecting about 10 percent of all public service organizations, while cuts in nonmetro counties affected only about 3 percent of their public service organizations. These results were comparable with data on funding levels submitted to the State Auditor every year by each County Auditor.

County organizations affected by cuts increased dramatically during the 1981-82 recessionary period and continued into 1984. By then, rural counties were more affected (27 percent of service organizations suffered cuts) than the more urban counties (23 percent). As the fiscal situation worsened, the more urban counties were better able to maintain services than more rural counties. Despite these variations, austerity had become the norm for most counties by 1984.

Not All Programs Cut

The pattern of cutbacks was not uniform. Judicial, law enforcement, and correctional services received budget increases in most counties, while environmental protection, planning, and community development were rather consistently cut (fig. 1). County departments responsible for general government, health/medical, public works (roads, bridges, buildings, etc.) and social/educational/extension services more often received increases than cuts, but many of these organizations (22-29 percent, depending on service type) were reported by their administering officials to be suffering budget declines.

The questionnaire made a distinction between changes actually occurring and preferred funding priorities. Preferences expressed by officials roughly matched expenditure patterns (table 1). Education (largely cooperative extension programs), planning, housing, and community development were given somewhat higher priority than actual budget allocations for 1984. However, parks, recreation, and environmental programs received the lowest priorities on the basis of both 1984 budgets and preferred funding patterns.

Less Funding, But Not Necessarily Less Service

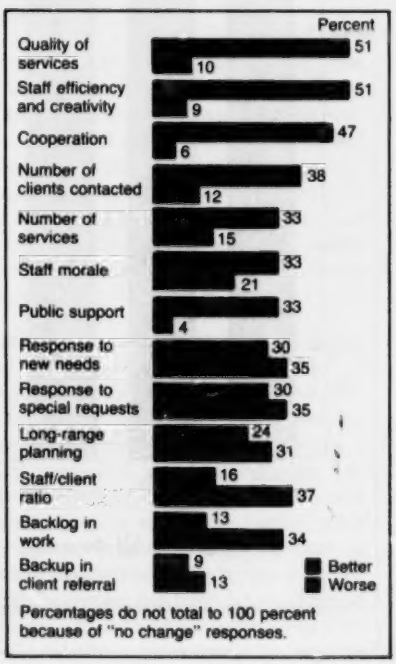
Despite budget constraints, approximately half of the officials thought improvements had been made in quality of available services, staff efficiency and creativity, and cooperation between service units. About a third also saw improvement in quantity of services, client contacts, morale among staff, and public support for services (fig. 2).

Increases or decreases in funding for their organization clearly affected the attitudes of officials. Budget increases, for example, were strongly associated with perceived "fairness of treatment in the budgeting process," "organizational effectiveness," "quality of services provided," "positive effects on staff morale and productivity," "service to clients," and "ability to maintain facilities and equipment." Officials in charge of organizations whose budget had been cut reported positive outcomes less often.

The officials were not all optimists though. Many noted impediments to providing good service, like greater work backlogs, more paperwork, less ability to respond to special requests, lower staff/client ratios, and less long-range planning.

Despite those downside effects, officials generally thought they did well at countering the negative effects of tight budgets. This may be due in part to deliberate measures undertaken to keep services flowing.

Figure 2
Officials saw some good results despite budget cuts



Percentages do not total to 100 percent because of "no change" responses.

Table 1—Budget priorities of county officials

	Percent[1]
Law enforcement	28
Judicial system	16
Education	9
Finance and administration	7
Detention and corrections	6
Welfare and child support	5
Drug abuse and alcoholism	5
Public health, planning, housing, and community development	4
Services for the elderly	4
Mental health	3
Juvenile services	3
Transportation	3
Parks and recreation	2
Natural resources, pollution control	2

[1]Percent of officials who gave each item the highest priority.

Table 2—Counties reduced employment in early 1980's

Year	Counties reducing employees[1]	Counties adding employees
	Percent	
1979	8	22
1980	16	25
1981	29	16
1982	35	14
1983	24	21

[1]Full- and part-time employees.

Source: Municipal Research and Services, Washington Association of Cities, Seattle, WA.

How Efficiency Was Increased

Reduced staffing was one of the chief ways of saving money. Counties reduced the numbers of employees considerably from 1979-83, as revealed in statewide surveys (table 2). (Statewide summaries of county employment and expenditure information were not available in 1984 because of budget cutbacks for data collection and publication.)

Some full-time employees were replaced by part-timers. Other popular measures for deferring or cutting expenses were to put off maintenance, delay capital expenditures, initiate user fees, centralize two or more services in fewer organizations, reduce program scope, and use volunteers. Some staff shared their time among two or more county organizations.

County officials considered user fees and part-time employees to be the most satisfactory, while deferred maintenance, delayed capital spending, and reduction of services were the least satisfactory.

About the Study

We had access to statewide data on changes in public service expenditures in all Washington counties for 1979-83, as summarized by the State Auditor's office. Further data were collected through a survey mailed to local government officials in nine counties during 1984. A comparison of these counties with all 39 counties (based on indicators of economic, social, and demographic characteristics) indicated they were reasonably representative of conditions in the State.

Three of the counties contained a city defined by the Census Bureau as a Standard Metropolitan Statistical Area (Clark, Whatcom, and Yakima), although most areas of each county are rural by census definition. The other six counties are nonmetropolitan, although three of these (Cowlitz, Grays Harbor, and Whitman) contain much larger cities than the remaining counties (Ferry, Lincoln, and Wahkiakum). Whitman County (the location of Washington State University) served as the pilot study site; since extensive revisions of the survey instrument were made afterwards, results from Whitman are not included in the analyses presented here.

The mail questionnaire elicited an 84-percent response rate from the 255 top officials in the nine counties, for a total study population of 214 elected, politically appointed, and competitively selected leaders of county public service organizations or general government. These included, for example, county commissioners, sheriffs, clerks, and all other county organizational unit heads; non-county-affiliated officials were also included if their organizations provid[illegible] county-wide public services (directors of State employment offices, for example).

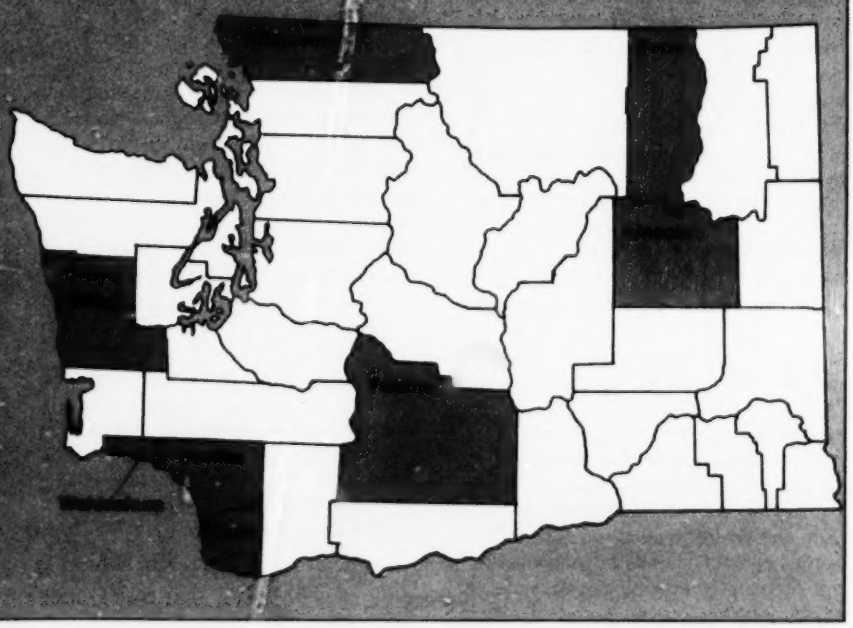
The percentages and other statistics are based on all survey respondents, regardless of th[illegible]position; a distinction is made between su[illegible]s whose organizations had been su[illegible] to budget increases or decreases only as part of correlation and regression analysis—because of the relatively small number of counties and officials included in the survey. We were interested in the composite perspective of all officials, although their attitudes were (as the findings indicate) affected by how they were treated in budget allocations. The data were not adjusted for inflation.

Correlation and regression analyses were used to measure possible relationships among county economic status, social conditions, degree of urbanization, expenditures for planning and community development, budget changes, and outcomes as perceived by county officials.

The study was funded by the Agricultural Research Center and Cooperative Extension, Washington State University, as part of an ongoing series of projects that attempt to measure changes, and their consequences, in local government jurisdictions. The research is associated with a national Agricultural Experiment Station project (NE-151) on Impacts of Fiscal Austerity on Local Governments, which will eventually allow for comparisons among several States.

Greater detail on research procedures is available from the authors.

Counties selected for mail survey



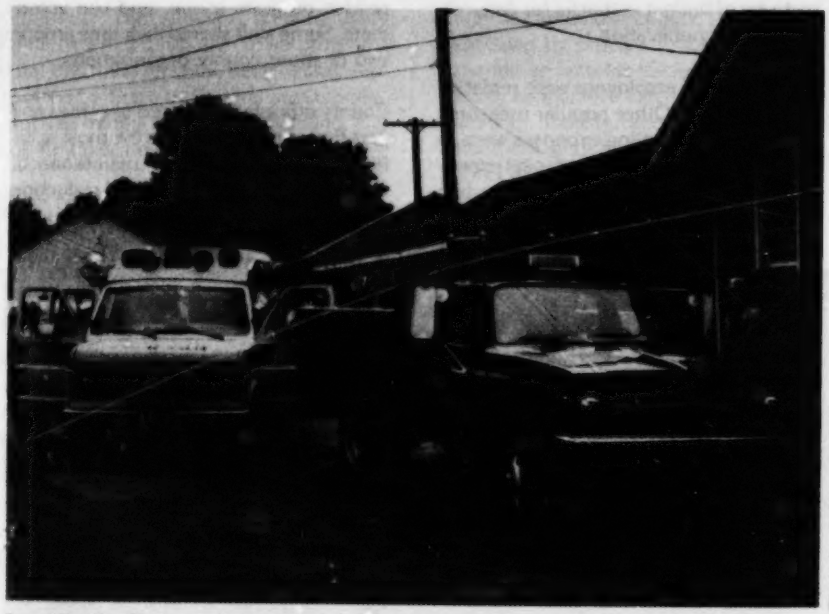


Photo by J. Norman Reid

Local funding for law enforcement and emergency services usually fared well, despite budget constraints of recent years in Washington State, which often forced cuts in other services.

County Characteristics Only Partially Explain Cutbacks

The more urbanized the county (based on census measures of town and city size in each county), the more likely was it to have higher overall economic status (measured by per capita income and property valuations), better social conditions (per capita educational levels, unemployment level, and degree of poverty), and higher expenditures for planning and community development. However, none of these characteristics was statistically related to budget change, nor were they consistently associated with public service consequences as perceived by county officials.

What Does It Mean?

The simultaneous contraction in public service funds from local, State, and Federal levels of government has made decisions about priorities particularly difficult. Law enforcement, the judicial system, and corrections have gained additional funding support—often at the expense of programs like planning, community development, parks, recreation, and environmental protection. The combination of "mandates" and local priorities benefited some public services while hobbling others, some of which have traditionally been important at the local level.

Federal and State mandates also introduce a complicating factor in the status of county officials because the mandates shift local decisionmaking authority to higher levels of government. This makes the role of local officials less influential than might be preferred, particularly because of wide variation in local needs and priorities.

Although we do not find consistent differences in the perspective of local officials from rural and urban counties, our study suggests that rural counties are cutting back more on services. This is demonstrated both in statewide data and in reports from local officials. But differences among nonmetro rural counties are also substantial, with the more populated counties generally sustaining fewer cuts.

Far from giving in to frustration, however, a high proportion of county officials in Washington view themselves as making decisions that will continue or expand high-priority services, while increasing service quality and efficiency.

As Federal funds are withdrawn—and State budgets remain tight—other nonmandated services (such as extension education) will probably suffer additional cuts. Local officials feel they have no alternative to cutbacks except for the highest priority programs—given an inability to raise new revenues because of legal limits on increases in revenue sources.

Many "traditional" services with low priority may no longer be available or may continue on a more modest scale; further economy measures may reduce local government employment, increase reliance on user fees, diminish capital expenditures, and otherwise change the manner in which services are provided.

Our findings suggest that local officials view themselves as excercising ingenuity and resourcefulness in devising methods of assuring that the most essential services will remain available. Their ability to continue providing the broad range of "less essential" services will depend on how well counties are able to introduce additional efficiencies or generate additional revenues. RDP

For Additional Reading...

James A. Christenson and Gregory S. Taylor. "Determinants, Expenditures, and Performance of Common Public Services." *Rural Sociology,* Vol. 47, No. 1, 1985, pp. 147-163.

Annabel Kerschner Cook and Gregory A. Poremba. "Budget Changes in County Organizations: Who Is Affected and How Do Agencies Cope?" *Journal of the Community Development Society,* Vol. 16, No. 2, 1985, pp. 38-53.

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V. Lane Rawlins and Betty Jane Narver. *The Effects of Federal Budget Changes on Washington State, 1981-1983.* Princeton, NJ: Princeton Urban and Regional Research Center, Woodrow Wilson School, Princeton University, 1984, 33 pp.

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Edward Moscovitch

Proposition 2½: The Worm's Eye View

I think of it as my worm's eye view of Massachusetts municipal finance. As chairman of the finance committee of the small town of Wenham (population 3,310), the problems I deal with are of a different magnitude than those of my colleagues in Boston, Lawrence, Cambridge, and New Bedford. Nonetheless, the same accounting, local aid, and expenditure rules apply to those of us in small towns as to our big brothers, and we are equally subject to the Commonwealth's tax limitation law, "Proposition 2½."

In many ways Proposition 2½ has improved the way we run our governments. It certainly has led to long overdue changes in state aid and in state mandates. Nonetheless, I believe we are entering a new phase in which an unamended Proposition 2½ will do more harm than good.

In a nutshell, Wenham has lived within 2½ mainly by limiting school spending, enjoying large increases in state aid and aggressively pursuing fee revenue.

Wenham's experience with Proposition 2½ falls into two stages: (1) a positive early stage in which school enrollments were falling, relatively easy spending cuts were made and the legislature moved local aid onto a new, much higher plateau; and (2) a negative second stage in which there was little waste left to cut, enrollment leveled off and local aid growth settled down to a rate consistent with state revenue gains.

Perhaps the most difficult problem any government or corporation has is dealing with people or organizational structures that are not as productive as they should be. Wenham dealt with two such problems. Most of the work in the municipal cemetery is very much like highway department work—mowing and maintenance. Day-to-day operation of the cemetery was turned over to the highway department, thereby saving some labor hours and reducing the supervisory hours required of the former cemetery director, who now works only part-time laying out grave sites.

By combining the functions of the treasurer and the collector, manpower requirements were reduced slightly and cash management practices were improved.

By putting our insurance out to bid rather than buying insurance from a local broker, premium costs were reduced substantially. Some frills were cut, such as a $1,000-a-day subsidy to the Memorial Day parade (free ice cream for the children has succumbed to the budgetary ax).

Over the years we cut out locally funded lunch costs, restricted busing for close-in students, eliminated some clerical and administrative positions, economized on school nurses by having one person cover two buildings, eliminated some low-priority specialists for kindergarten programs, shortened the athletic schedule and eliminated some little used sport and extracurricular programs.

Revenue enhancement was critical to the program. We examined the schedule of inspection fees—roofing, building permit, electrical permit, etc.—and devised a set of increases designed to assure that the town fully covered its costs for each visit. Some of the local contractors objected when the first item came up for a vote at town meeting (even though they had voted for 2½) but the finance committee and selectmen prevailed.

We embarked on a systematic program to encourage and cajole other town departments into raising fees. The library agreed reluctantly to raise the daily overdue charge from a penny to a previously unthinkable 5 cents. The park department agreed to charge a fee for parking at the town beach. Water rates were raised to cover both operating and capital costs.

There can be little doubt that the Proposition 2½ spending limits forced (or helped) us to make some overdue changes. How long are such limits useful? In what I might immodestly call Moscovitch's first law of spending limits, I have observed that lean will be cut long before all the fat is gone. One reason for this is that my fat is your lean.

I have long argued that Wenham should not be subsidizing a town band to the tune of $500 a year, nor should it maintain a building for the local American Legion post. My arguments against these expenditures at town meeting have been overruled by voters who undoubtedly favored Proposition 2½. On the other hand, my opposition to wholesale reductions in the local teaching force and my support for competitive teacher and municipal pay scales may seem like fat to some townspeople.

With its 2½ percent cap in levy increases in the face of 5 percent inflation, Proposition 2½ implies indefinite program cuts. But beyond some point, programs simply cannot be cut. Wenham has a call fire department; the men and women get paid when they work and not otherwise. Once a responsible budget for equipment and training has been set, that budget cannot be cut unless we somehow eliminate fire.

Excerpted with permission from Government Finance Review, October 1985, pp. 21-25.

Edward Moscovitch is vice president of the Boston economics and management consulting firm, Charles Rivers Associates, and was formerly the Massachusetts state budget director. He has chaired Wenham's Finance Committee for three of the six years he has served on it.

Priscilla Salant and William Saupe

Financial Viability of Farm Families

Using data from new farm surveys, the authors constructed a viability ratio to measure a family's ability to meet its obligations from total income. Coupled with other farm characteristics, the ratio can give policymakers a means of seeing why some farms are viable and others are not. The analysis is based on a survey of 1,616 farm families in Wisconsin, Mississippi, and Tennessee.

Financial stress in agriculture does not create the same kinds of problems for all farm families. Until recently, we lacked data to measure in a comprehensive way how financial circumstances differed among farm families. Now, thanks to two USDA Family Farm Surveys, we have a much better understanding. This new knowledge should be helpful in developing policies and programs to assist farm families most affected by financial stress.

Using these new data, we measured the material well-being of different groups of farm families by comparing their income from all sources with their total financial obligations. Total income includes net farm income, earnings from off-farm work, property income (dividends, interest, and rent), Social Security, and other transfer income. Annual financial obligations include an allowance for a minimum level of consumption, the cost of replacing farm equipment over time, and repayment of debt. Families who have enough income to meet their obligations (a ratio of income to financial obligations of 1.0 or more) are considered viable. Families with a viability ratio of less than 1.0 are considered nonviable even though they may be able to survive temporarily with such strategies as not replacing worn-out farm machinery.

For families intending to continue farming during the 5 years following the survey, the viability ratio compares net household income from farming, off-farm work, and unearned sources to the estimated level needed to meet financial obligations: minimum consumption expenses, principal payments, and equipment replacement. For families intending to leave farming within the 5 years, the viability ratio compares estimated net income from the return on net worth, off-farm work, Social Security, and other unearned sources to estimated minimum consumption expenses.

The viability ratio is an improvement over other, less complete measures of financial well-being. The debt/asset ratio, for example, indicates a family's debt position but only hints at the family's ability to repay; the poverty index indicates a family's capacity to meet only its consumption expenses. In contrast, the viability ratio takes all financial obligations into account and measures the family's ability to meet those obligations, that is, to survive without making major changes in how they allocate their resources, such as changing the size or efficiency of their farm, or the number of hours they work off the farm.

To analyze variation in financial stress among farm families, we divided households in each of the two study areas into two categories: those who planned to leave farming within 5 years and those who expected to continue. Families who planned to continue farming were further divided in mutually exclusive subgroups (tables 1 and 2):

- Families that operated dairy farms in Wisconsin.
- Families with nondairy farms and part-time operators (who worked off-farm for a period equivalent to at least 4 weeks during the survey year);
- Families with full-time operators and small nondairy farms (less than $20,000 sales); and
- Families with full-time operators and large nondairy farms (sales of $20,000 or more).

Within each group we sorted families into low-viability (ratio less than 1.0) and high-viability brackets (ratio 2.0 or greater), excluding those falling between to emphasize the contrast. We then compared average levels of human resources (for example, operator age and education), farm business, and financial characteristics across the brackets. However, only key differences between the low- and high-viability families are presented in the tables.

Families that Planned to Stop Farming

Families in this group said they planned to stop farming within 5 years of the survey. For most of them, this decision reflects retirement plans rather than a response to any financial stress at the time of the survey. On average, we estimate that earnings on their investments, Social Security receipts, other retirement income, and off-farm earnings will add to more than four times their financial obligations.

The key difference between low- and high-viability families that planned to leave agriculture was that lower asset levels among the low-viability families was largely responsible for lower net worth and higher debt/asset ratios. When they retire from farming, the low-viability families can expect to earn less income on their relatively small net worth than high-viability families.

Wisconsin Dairy Farm Families

Almost half of the dairy farm families had low viability ratios, especially those who were younger and had entered farming more recently (table 2). Low-viability families, including those who recently began farming, owned about the same amount of assets as high-viability dairy farmers, but had higher debts and lower net worth. The larger debt loads contributed to higher interest payments, which raised cash operating expenses and lowered net farm income. In addition, many of the younger dairy farmers may have started farming too recently to have obtained long-term financing at the low interest rates available in the early and mid-1970's.

Neither average farm size (measured by gross sales and number of dairy cows) nor average milk sales per cow appeared to

Priscilla Salant was an economist with the Agriculture and Rural Economics Division, ERS. William Saupe is a professor in the Department of Agricultural Economics, University of Wisconsin-Madison/Extension.

Table 1—Key differences between high- and low viability families, 29-county Mississippi-Tennessee area

Item	Unit	Stop farming		Part-time nondairy		Full-time nondairy with— Sales under $20,000		Full-time nondairy with— Sales at least $20,000	
		Low	High	Low	High	Low	High	Low	High
Farm households (estimated)	Number	750	550	900	2,465	1,140	235	985	685
Operator:									
Age	Years	64	61	46	47	61	65	46	48
School completed	Years	***8.0***	***10.9***	***10.9***	***11.7***	8.4	9.3	11.8	11.9
Gross sales	Dollars	***5,950***	***17,210***	***26,652***	***11,578***	***4,828***	***8,494***	116,695	153,013
Crop acres	Acres	***53***	***139***	***219***	***79***	65	52	749	667
Assets	Dollars	***70,422***	***351,860***	***265,915***	***153,523***	143,014	168,648	527,330	448,524
Debts	do.	4,759	8,004	***69,893***	***9,400***	***13,771***	***1,158***	***127,018***	***25,425***
Net worth	do.	***65,663***	***343,856***	***196,022***	***144,123***	129,243	167,490	400,312	423,099
Debt/asset ratio		***.11***	***.02***	***.26***	***.06***	***.10***	***.01***	***.24***	***.06***
Net cash income from farming[1]	Dollars	1,559	3,783	2,668	5,590	***-874***	***5,219***	***20,078***	***76,387***
Off-farm work	do.	***2,571***	***6,856***	***12,889***	***23,185***	***1,243***	***5,715***	3,314	4,869
Nonfarm asset and transfer income	do.	***3,369***	***6,166***	616	1,098	***2,942***	***10,016***	2,070	2,354
Total household	do.	***7,499***	***16,805***	***16,173***	***29,873***	***3,311***	***20,950***	***26,092***	***83,610***

Note: Bold italic numbers indicate that the difference between low- and high-viability groups is statistically significant.

[1]Farm production data collected for 1980, a year of unusually low crop yields. To measure viability under more representative conditions, we adjusted the yields of major cash crops on a farm-by-farm basis. Net farm income reflects this adjustment.

Source: 1981 Mississippi-Tennessee Family Farm Survey.

Table 2—Key differences between high- and low-viability farm families, 8-county Wisconsin area

Item	Unit	Stop farming		Dairy farms		Part-time nondairy		Full-time nondairy with— Sales under $20,000		Full-time nondairy with— Sales at least $20,000	
		Low	High	Low	High	Low	High	Low	High	Low	High
Farm households (estimated)	Number	720	670	3,195	1,645	275	695	230	140	350	230
Operator:											
Age	Years	57	60	***40***	***49***	50	51	63	68	47	50
School completed	Years	9.8	9.8	11.8	11.4	12.0	12.9	9.8	10.7	10.9	11.2
Gross farm sales	Dol.	***28,166***	***60,290***	82,607	85,794	***24,514***	***11,267***	6,980	4,645	109,539	96,884
Crop acres	Acres	***84***	***181***	***210***	***180***	***149***	***66***	***85***	***39***	465	323
Assets	Dol.	***164,025***	***457,516***	383,699	397,165	***262,855***	***149,193***	177,983	274,664	759,837	423,592
Debts	do.	33,439	54,954	***155,269***	***31,484***	***85,774***	***20,765***	2,155	1,167	***223,159***	***27,014***
Net worth	do.	***130,586***	***402,562***	***228,430***	***365,681***	177,081	128,428	175,827	273,497	536,678	396,578
Debt/asset ratio		***.20***	***.12***	***.40***	***.08***	***.33***	***.14***	.01	.004	***.29***	***.06***
Net cash income from farming	Dol.	***8,416***	***18,427***	***10,568***	***39,052***	-7,466	1,115	-1,128	275	***-4,605***	***44,114***
Off-farm work	do.	***3,748***	***10,303***	***2,535***	***6,015***	15,127	29,603	390	5,566	1,428	2,453
Nonfarm asset and transfer income	do.	6,236	8,338	***2,042***	***5,673***	2,909	3,884	***5,283***	***22,646***	7,997	10,221
Total household income	do.	***18,400***	***37,068***	***15,145***	***50,740***	***10,570***	***34,602***	***4,541***	***28,487***	***4,820***	***56,788***

Note: Bold italic numbers indicate that the difference between low- and high-viability groups is statistically significant.

Source: 1983 Wisconsin Family Farm Survey. Editor's Notebook

influence viability. However, the high-viability farms had higher profit margins and generated their sales with 30 fewer crop acres. This finding suggests that while high interest rates, resulting partly from later entry into farming, and higher debt loads were important in reducing viability, some of the low-viability farmers were also less efficient.

Part-Time Farmers on Nondairy Farms

Among part-time farmers on nondairy farms, low-viability families operated larger farms than high-viability families without generating higher net farm income. In Mississippi-Tennessee, net farm income did not differ significantly between the low- and high-viability families (table 1). In Wisconsin, the low-viability families reported significantly lower net farm earnings but from much larger farms. In fact, they lost money on their farms in 1982 (table 2). Low-viability farm families had more assets, greater debts, and higher debt/asset ratios than high-viability families. Low-viability families also averaged significantly lower earnings from off-farm work.

Seventeen percent of the families in this group had low viability ratios. Some may have had too few hours left after working a nonfarm job to manage their farms effectively. In contrast, almost half of the farms in this group had high viability ratios. Because they rely most heavily on off-farm earnings, they may be able to withstand farm-related yield or price shocks. Conversely, they may be more vulnerable to changes in the national or local economy that affect the demand for their off-farm labor and result in layoffs.

Full-Time Farmers on Smaller Nondairy Farms

These farmers averaged more than 60 years old. High-viability farmers in both study areas received more nonfarm asset and transfer income than low-viability farmers.

Farming was a small-scale activity for all households in this group. Farm sales averaged $4,828 for the low-viability families and $8,494 for the high-viability families in the Mississippi-Tennessee area (table 1). Farm profitability apparently contributed to household viability. The low-viability group averaged a net cash farm operating loss of $874, while the high-viability group averaged an operating gain of $5,219. Low-viability families also had lower receipts from off-farm work, nonfarm assets, and transfer income.

The Wisconsin area contained only a few families with full-time operators and smaller farms. The single outstanding difference between the low- and high-viability families was the amount of nonfarm asset and transfer income received (for example, Social Security, interest, dividends, and rent). The high-viability families took in four times the unearned income reported by the low-viability families.

Full-Time Farmers on Larger Nondairy Farms

These farms were relatively large, averaging several hundred crop acres and a net worth of around $400,000. Gross sales did not differ significantly between low- and high-viability farms in either study area. The two major differences were the amount of net farm income and the family's debt level.

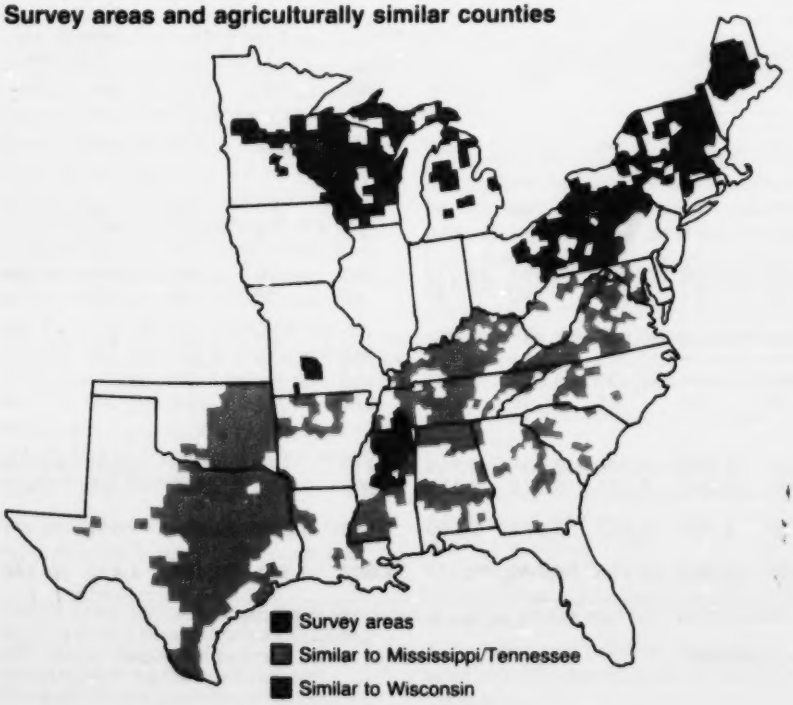
In Mississippi-Tennessee, the low-viability families averaged $20,708 in net cash income, less than a third that of the high-viability families (table 1). In Wisconsin, the low-viability families averaged a farm loss of over $4,600, while the high-viability families averaged a gain of over $44,000 (table 2).

The indebtedness of the farm household also appeared to play a role in viability. The average debt/asset ratio of the low-viability households, while not high enough to indicate difficulty in securing credit, was at least four times that of the high-viability households in both survey sites. Neither total assets nor net worth differed among groups, although total debts differed significantly. The interest expense associated with that debt appears to have cut sharply into farm profits.

Implications for Public Policy

The viability ratio gives us a more complete picture of farm family well-being than we have had in the past. By comparing low-viability families with high-viability families, we gain insight into the diversity of circumstances within the farm population. Equipped with this new knowledge, decisionmakers faced with today's farm crisis should be able to target farm and rural policy more precisely.

Survey areas and agriculturally similar counties



About the Surveys

Unlike data from the Census of Agriculture, which provides information only on farm operations, and data from the *Census of Population*, which provides information only on households, the Family Farm Surveys provide data on both farm establishments and households.

Two surveys were carried out to collect farm and nonfarm financial data and other related data from families operating farms that normally would produce at least $1,000 of farm sales per year. The first survey, which obtained family and farm business data for calendar 1980 and asset and debt information for January 1, 1981, covered 29 counties in Mississippi and Tennessee. It yielded 1,087 usable questionnaires. The second survey obtained comparable data for 1982 and January 1, 1983, in eight southwestern Wisconsin counties. This survey yielded 529 usable questionnaires. The surveys were taken before the financial crisis in agriculture was well underway and therefore understate the severity of current financial problems facing farm families.

Information about farm expenditures, receipts, inventories, assets, and debts, as well as about various sources of income was collected in considerable detail. This strategy enabled the researchers to calculate valid estimates of net household income.

The survey areas were chosen, in part, because they are similar to larger agricultural regions of the Nation in average size of farm, topography, and farm type. The Mississippi-Tennessee site is like parts of the Southeast and Piedmont, where much of the land is used for agriculture but farms are relatively small. The Wisconsin site is similar to other parts of the Midwest and to parts of New England where dairying is the major agricultural enterprise and most farms are family operations.

The map shows counties that are agriculturally similar to those in the two survey sites. In counties resembling the Mississippi-Tennessee site, at least 70 percent of all farms had sales of less than $20,000 in 1978 and at least 30 percent of all land was in farms. In counties resembling the Wisconsin site, dairy products accounted for at least 35 percent of all farm sales in 1978 and sales per farm were less than $60,000. While survey results apply only to the surveyed counties, it may be useful to readers to see which counties are similar (and which are not similar) even in these limited ways.

Readers interested in detailed information on cash receipts, production expenses, and income of farms based on data from their own State are referred to the USDA series *Economic Indicators of the Farm Sector*, (available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402).

What do our findings mean for rural communities? Thirty-two percent of the farm families interviewed in the early 1980's were not financially viable. Their difficulties stemmed from heavy debt loads, poor management, and low levels of human and financial resources. Farm commodity prices and declining land values, both of which are beyond the farm family's control, have worsened economic circumstances in the farm sector since the surveys were taken.

Communities can act to improve the well-being of low-viability farm families. Whether these families stop farming and move elsewhere depends not only on what happens to land values and commodity prices, but also on the availability of alternative job opportunities and vocational training, farm management assistance, and social service programs.

For example, families who are having trouble meeting their financial obligations and want to continue farming may need counseling to evaluate their financial circumstances and their alternatives. Some dairy farmers and larger full-time farmers could benefit from better farming practices and financial management. Training programs to increase efficiency would be helpful in some cases.

Other farmers, especially part-time farmers who have trouble combining their farm and off-farm work commitments, may benefit from Extension Service assistance in managing their farms better, and more effectively combining farm and off-farm activities. Some families who primarily wish to live on a farm, may be able to achieve this goal with a smaller commitment to farming by changing or dropping some farm enterprises.

For families in financial trouble who stop farming, counsel or assistance in closing out a distressed farm business may help them salvage more equity from their farm and reduce the losses sustained by local merchants and lenders. Rural communities that wish to avoid losing displaced families could take an active role in supporting occupational retraining programs and developing nonfarm job opportunities.

For almost half of the smaller low-viability full-time farmers, farming appears to be a drain on their limited resources. The typical farm in this group is not large enough to support a family, even if it could be made more profitable. In terms of improving viability, farm management assistance programs, job training, and other rural development efforts are unlikely to have a major impact, primarily because of the typical operator's age. Little can be done for these farm families at the local level other than helping them deal with the tax consequences of retirement and convert farm assets into a flow of retirement income, and making them aware of available social services.

About 17 percent of the families we interviewed planned to stop farming within 5 years, not because of financial stress but because they were at retirement age. Such families can be a valuable social and economic resource for community development. If they retire and remain in the local community, they will augment the local demand for goods and services by spending their investment income and pensions locally. Communities that provide medical and other services commonly used by retired persons stand a better chance of retaining these people and their spending power in the trade area.

RDP

Compiled by Daniel L. Milkove

Susan Pollack and Shelley Pendleton

Nonmetro Unemployment Tied to Major Industry in Regions

Nonmetro unemployment rates have been higher than metro rates since 1979, reversing earlier patterns. Two subsequent national recessions have tended to hurt nonmetro economies more than metro areas, and nonmetro areas have been slower to recover. In 1984, the average annual unemployment rate for nonmetro areas was 8.1 percent, compared with 7.3 percent for metro areas.

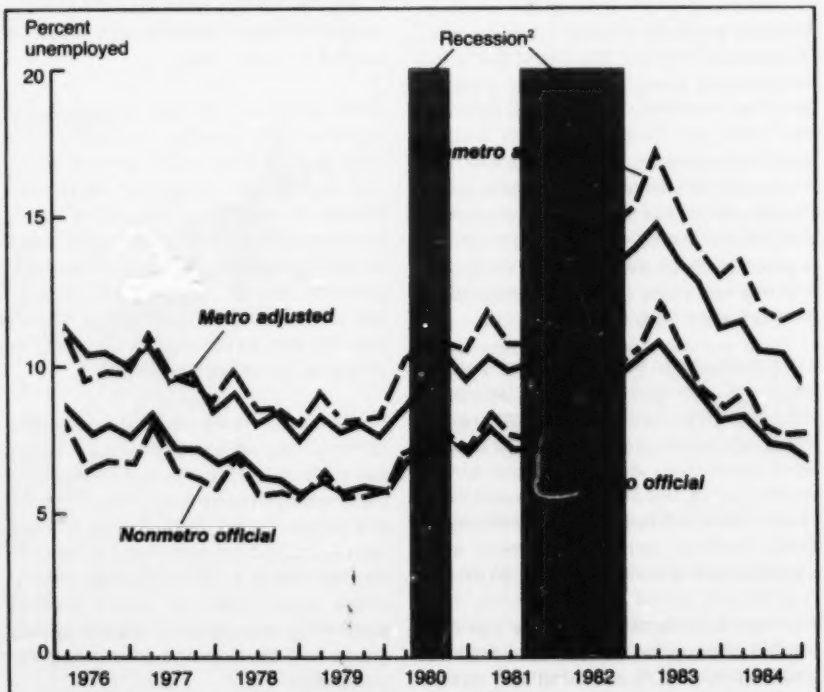
Official unemployment statistics tend to underestimate unemployment, especially in nonmetro areas. When rates are adjusted to include those who have given up looking for work, and those who work part-time but want full-time work, metro-nonmetro differences are greater. The 1984 adjusted average annual unemployment rate was 12.2 percent in nonmetro areas compared with 10.4 percent in metro areas. This adjusted rate includes discouraged workers and half of those involuntarily working part-time in addition to those already categorized as unemployed.

Unemployment rates vary considerably across nonmetro counties. In 1984, a fourth had unemployment rates of 12 percent or more, while a fifth had unemployment rates below 6 percent.

One source of variation in the nonmetro unemployment rates is due to the industrial specialization of nonmetro counties. Lloyd Bender and his associates have categorized nonmetro counties according to their dependence on agriculture, mining, manufacturing, or other single sources of income. Their county typology helps to explain differences among unemployment rates in nonmetro areas. The map shows 1984 unadjusted unemployment rates of nonmetro counties.

Among areas with chronically high unemployment are many mining dependent areas, notably the mining areas of Michigan, Oregon, and some coal-mining counties of West Virginia and Kentucky. Persistent high rates of unemployment also are found in the manufacturing, timber, and resort areas of the Northern Pacific States and Lake States, where many jobs are available for only a few months of the year. Chronically high unemployment rates are also characteristic of the Indian reservations of the Northern Plains and Southwest and areas with predominantly poor Hispanic or black

Figure 1.
Adjusted Rates[1] Show Unemployment Higher than Official Rates, and Nonmetro Above Metro Rates



[1] Adjusted unemployment rates include all persons counted as unemployed in the official measure plus discouraged workers and one-half of the persons involuntarily working part-time.

[2] Shaded areas indicate recessions as designated by the National Bureau of Economic Research.

Data from the Current Population Survey, Bureau of the Census.

Susan Pollack is an economist and Shelley Pendleton is a sociologist with the Rural Labor Markets Section of the Agriculture and Rural Economics Division, ERS.

populations in the Southeastern and Delta States as well as Texas and Kentucky.

Nonmetro areas in regions depending heavily on manufacturing and mining had moderate unemployment rates in 1984, ranging between 6 and 12 percent. The decline in manufacturing during the 1981-82 recession played a large part in raising unemployment rates in these areas from the low to moderate range. This was especially evident in the Corn Belt (Iowa, Missouri, Illinois, Indiana, and Ohio), Delta (Arkansas, Louisiana, and Mississippi), Southeast (Alabama, Georgia, and South Carolina), and parts of the Appalachian areas (especially Tennessee, North Carolina, and Virginia).

Although the national unemployment rate was higher in 1984 than in 1979, a few nonmetro areas, mostly in the booming upper Northeast, southern Florida, and eastern Arizona, experienced a reduction in their unemployment rates. Employment in many of these areas depends on the fast-growing service industries or high-technology industries.

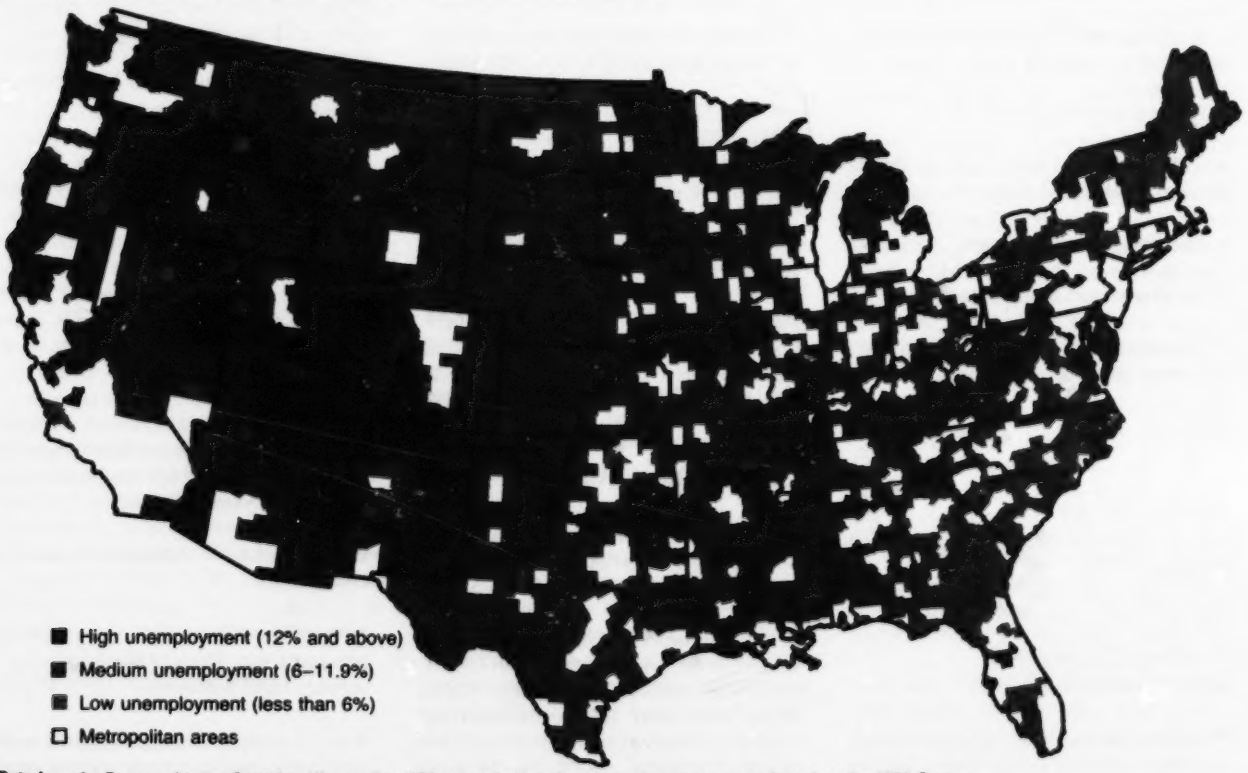
Many of the nonmetro counties with less than 6 percent unemployment depend mostly on farming and are located largely in the Northern and Southern Plains States of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. Many of these same counties, however, have shown little or no employment growth in recent years and considerable population decline. Unadjusted unemployment rates do not fully reflect the economic hardship in these counties.

For Additional Reading...

L. Bender, B. Green, T. Hady, J. Kuehn, M. Nelson, L. Perkinson, and P. Ross. *The Diverse Social and Economic Structure of Nonmetropolitan America, RDRR-49.* Economic Research Service, U.S. Department of Agriculture Oct. 1985.

Sigurd R. Nilsen. *Assessment of Employment and Unemployment Statistics for Nonmetropolitan Areas,* RDRR-18, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture. Dec. 1979.

Nonmetro unemployment rates reflect diverse economies



Data from the Bureau of Labor Statistics. We use the 1983 categorization of metro and nonmetro areas based on the 1980 Census.

SHORT SUBJECTS

RDP

Compiled by Thomas McDonald

How To Attract High-Tech Firms

Researchers asked about 1,500 firms what factors were important in determining their business location. Those that follow were "absolutely essential" or "very important," according to more than 40 percent of the firms surveyed.

- Clean physical environment
- Availability of technical personnel
- Absence of drug and alcohol problems in the community
- Quality public school system
- Low traffic congestion
- Knowledgeable bankers friendly to technology-based firms
- Positive policies and attitudes of local government toward industry
- Medical services and facilities
- 1-day service from United Parcel Service and Federal Express
- Housing for management
- Nearby airport for passenger service
- Opportunities for consultation with university people.

For more information, see Daryl Hobbs, "The New Infrastructure: Creating a Climate for Growth," in *The Changing Business Climate*, proceedings of the Southern Growth Policies Board Annual Meeting, 1985.

Creating Employment Opportunities

That's the number one problem facing rural communities today. Many leaders contend that creating new enterprises is the best way for rural communities to strengthen their economic viability.

An upcoming symposium will bring together experts from the research and extension communities and other organizations interested in rural development to share information and insights on the current state of knowledge and practice on rural entrepreneurship.

Sponsored by USDA's Economic Research Service and Extension Service, the Tennessee Valley Authority, Farm Foundation, and Regional Rural Development Centers, the symposium will:

- Determine the status of research on entrepreneurship, especially as applied to rural areas, and identify research and data gaps that inhibit development of effective policies to promote entrepreneurship.
- Identify successful extension and other programs supporting rural entrepreneurship.
- Determine the potential for rural entrepreneurship to help in solving the rural and farm family income crisis.

When? February 10-12, 1987
Where? Knoxville, Tennessee

Make reservations by January 19, 1987. For more info, call the Southern Rural Development Center, Box 5446, Mississippi State, MS 39762; telephone (601) 325-3207.

Changing Rural America

What kind of future can rural communities expect? And what kind of rural policies should be proposed?

In this ERS-produced film, Ken Deavers, a rural development expert with USDA, talks with USDA demographer Calvin Beale and other USDA development specialists and Extension Service officials about changing conditions in rural America and the prospects for rural growth.

They review recent population and economic trends in rural areas and identify types of rural counties that will have very different futures if the trends continue. Their discussions make it clear that the growing competitiveness of the international marketplace is putting strong pressures on rural communities. Those that can adapt to changing economic fortunes can capitalize on the new opportunities. Those that fail to adapt may face futures of stagnation or decline.

The half-hour film is suitable for providing background briefings to policy officials, for presentation in public meetings and conferences, and for classroom use.

Cost is $25. Make check payable to ERS. Send payment to J. Norman Reid, Rm 324, 1301 New York Ave., N.W., Washington, DC 20005-4788; telephone (202) 786-1542. Specify VHS, Beta, or 3/4-inch format.

Rural Development, Empire State Style

New York State enacted into law in August 1986 a broad range of bills to upgrade the quality of rural life there, affecting 3 million New Yorkers in 44 counties.

The bills are the first legislative proposals by the State's Legislative Commission on Rural Resources, which has been in existence for 3 years.

Among the list of accomplishments are creation of:

- An Office of Rural Affairs to coordinate programs and efforts of State agencies to remedy rural problems.
- A Rural Public Transportation Coordination Program to assure minimal levels

of transportation in rural areas. The program will provide financial assistance for new start-ups and expansion of existing systems in rural areas.

• A Local Roads Classification Task Force to develop standards and a classification system for the State's rural roads, based on a road's needs and uses.

• A Health Care Delivery System to promote innovative approaches in delivering quality health care in rural areas.

• Distance Learning in Small Rural Schools to facilitate electronic hookups of interactive two-way computers to bring a wider range of teaching subjects to small schools that could not otherwise afford additional teachers.

For more information, call Ronald C. Brach, executive director of the Commission, at (518) 455-2544.

New Dimensions in Rural Policy

That's the title of a new book by the U.S. Congress. The 580-page book ought to be especially pertinent to our subscribers since the 65 papers cover many of the issues treated in *Rural Development Perspectives*. Topics like employment, agriculture, rural communities, businesses, education, health, the elderly, rural families, infrastructure, local governments, banking, health care, and all the major topics of concern in rural areas today. Most of the papers are fairly short, 7-10 pages.

The book is a product of an ongoing initiative called The Economic Evolution of Rural America, headed by Sen. James Abdnor, vice chairman of the Joint Economic Committee.

Cost is $16 from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238. Stock number 052-070-06151-1.

Library on Rural Business

The Employment/Economic Development Connection: New Tools, New Roles, New Directions--A Guidebook is designed to help communities develop effective ways of solving employment and economic development problems by forging public-private sector partnerships and linking employment and economic development activities. The guidebook is directed to practitioners at both the policy and program levels. Includes step-by-step suggestions for developing and implementing a linkage strategy illustrated by brief case studies showing different ways communities have used the strategy to deal with plant closings, to link employment to downtown development, to attract industrial development, or to create jobs by promoting new and small businesses. Written by the National Alliance of Business and SRI International, the guidebook costs $15 from NAB Clearinghouse, 1015 15th Street, N.W., Washington, DC 20005.

Great Downtown Events: How to Build Crowds and Boost Business describes examples of successful events conducted in downtowns. From sidewalk sales and block parties to ethnic festivals and new construction celebrations, the guidebook provides how-to information on staging a variety of programs. Cost: $39.50 plus $3.50 postage and handling. Send to Downtown Research and Development Center, 1133 Broadway, Suite 1407, New York, NY 10010.

Guide to Innovation Resources and Planning for the Smaller Businesseses identifies a wide range of resources, (Federal, State, private) available to assist smaller business in areas such as financing, information gathering, and management. The capabilities of these resources are summarized and phone numbers and addresses given. Intended for individual companies as well as State and local government economic development planners, the book is available form Oklahoma Extension Technology Transfer Center, 1515 W. Main. P.O. Box 1713, Durant OK 74702-1713, (405) 920-0132.

Fundamentals of Business is an instructor's guide, designed especially for rural communities, that provides business management training for operators of small independent firms. The manual is divided into 10 workshops that can be conducted with retail merchants in small communities. It provides teaching outlines, overheads, handout materials, lecture notes, resource lists, slide sets, and discussion material for 10 topics essential to good business management. Topics include customer relations, developing a business plan, forecasting profits and cash flow, time mangement, visual merchandising, computer use in business, financing a business, analyzing a market, personnel management, and starting a new business. The manual can be purchased with or without the slide sets. Price for both manual and slides is $40; for manual alone, $20. Write to Southern Rural Development Center, Box 5406, Mississippi State, MS 39762; telephone (601) 325-3207.

Planning a Community Center contains guidelines for organizing a community center, including how to attract extensive citizen participation, maximize the facility's use, and keep costs to a minimum. Available for $1.40 from Publications Distribution, Iowa State University, Ames IA 50011.

Rural Poverty and Nutrition

The most recent count shows more than 13.5 million poor people in rural America. That's more than in urban areas, and, according to a troubling new book, the rural poor are far more nutritionally at risk.

Rising Poverty, Declining Health: The Nutritional Status of the Rural Poor, the result of a year-long study supported by the Ford Foundation, finds the rural poor underfed, malnourished, and in poor health. The rural poor have inadequate intake of calcium, iron, vitamins A and C, and zinc, and tend to have stunted growth, low birthweights, and high levels of infant mortality. The book claims that the rural poor show these nutritional inadequacies far more than do urban poor.

Some of the nutritional inadequacies among the rural poor vary by region and race. Southern rural poor had the highest prevalence of abnormally low nutrient levels, for example, and nonwhites had higher rates of obesity than whites.

Cost is $10 from Public Voice for Food and Health Policy, Suite 522, 1001 Connecticut Ave., N.W., Washington, DC 20036; telephone (202) 659-5930.

BOOK REVIEWS

RDP

Compiled by Richard J. Reeder

THE IMPACT OF POPULATION CHANGE ON BUSINESS ACTIVITY IN RURAL AMERICA

Kenneth M. Johnson. Boulder, Col., Westview Press, 1985. 180 pages, $29.50.

Reviewed by Linda L. Swanson

Rural America's population revival of the 1970's now appears to be over in many areas. But the author of this book claims that its effects will continue because more young adults are now living in rural (or nonmetro) areas than before, and their children will add further to the nonmetro population. Businesses have already responded to the expanded nonmetro market, and businesses tend to resist contracting even when population declines. Johnson, therefore, makes a convincing case that nonmetro business activity will not necessarily fall off in step with a population slowdown.

Though sponsored by the Rural Sociological Society, a primarily academic organization, this book (at least the second half) has a sharper "business survival" perspective than is usually found in academic publications. Johnson, who is both a professor and a demographic consultant for large corporations, opens with an explanation of how his research differs from others': he treats population change as a primary cause of shifts in the business structure of rural nonmetro areas, rather than as a result of this and other factors.

The discussion of historical population trends (chapter 2) suffers from its reliance on an eight-category grouping of counties according to their pattern of population gain or loss from 1930-70. The categories' lack of intuitive appeal makes it difficult for anyone but a dedicated demographer to read about their median size and decade-by-decade change. The categorization persists throughout the book, but only in this chapter does it seem to weigh down the discussion. The rest of the chapter provides a good historical background, with interesting interpretations of the historical role of the black population and the changing relative roles of net migration and natural increase in nonmetro population shifts.

Johnson makes a crucial point about the relationship between population change and business activity. His analysis of 1930-70 data shows that increases in retail sales and services were highest in nonmetro counties with population gains and the effect was intensified the longer the period of gain. In declining counties, particularly where a period of growth preceded decline in the 40-year period, sales and receipts did not decline as one might have expected, but simply increased at a slower pace than in the consistently growing counties. Although income rose in nonmetro areas, that fact alone could not account for the health of business in the face of population decline. Johnson reasons that the anomaly is consistent with the ecological theory stating that system change is irreversible; if a growing unit contracts, it does so through a different process. The idea that business activity is in some way self-perpetuating is an important consideration when forecasting the stability of nonmetro communities.

Johnson enhances his analysis by dividing business activity into specific parts and examining the direct and indirect effects of population change on retail sales and service receipts, number of establishments, and employment. He shows that population shifts affect retail sales and service receipts directly; the number of establishments directly, as well as indirectly through sales; and employment only indirectly, through sales and the number of establishments. This kind of domino effect is important to keep in mind in considering the nature of business activity inertia in response to population shifts. The diagrams and text discussion make the results clear even for those unfamiliar with the statistical technique of path analysis.

The last part of the book, dealing with the effect of the 1970's population turnaround, provides a good discussion of the changing nonmetro business climate. The market has become more favorable to retail and service enterprises in sparsely populated areas, Johnson says, because of the increasing proportion of nonagricultural people, the rising influence of the media on consumption attitudes, improvements in transportation, and the willingness of nonmetro people to travel greater distances than metro people to buy particular goods. For these reasons, as well as because of the saturation of the metro market, more large chains are now catering to the nonmetro market and finding it profitable. Nonmetro areas have become viable new markets that no longer need to live in the shadow of a metro area to survive.

Linda Swanson is a sociologist with the Agriculture and Rural Economics Division, ERS.

BEYOND OIL: THE THREAT TO FOOD AND FUEL IN THE COMING DECADES

by John Gever, Robert Kaufman, David Skole, and Charles Vorsmarty. A Project of Carrying Capacity, Inc. Ballinger Publishing Co., Cambridge, MA 1985. 304 pages. $34.95, hardcover; $14.95, paperback.

Reviewed by Thomas A. Stucker

One danger in publishing a textbook about a single commodity is that the lead time for research, writing, and publishing will cause a book to appear after the peak in its topic's interest. That may have happened here. Although this book is interesting, it captures perfectly the thinking popular in the 1970's. But, as it came off press, we were already in the midst of a

Thomas Stucker is an economist with the Agriculture and Rural Economics Division, ERS.

relative oil glut with oil prices at their lowest levels in a decade.

The authors attempted to add some objectivity (and therefore credibility) to their conclusions by using a computer model to generate their results. But those who have worked with computer-generated simulation models know the frailty of engineering-estimated inputs and relationships on which model results are based. In this case, the model structure also may be faulted for not realistically simulating action of the price mechanism and market. However, these shortcomings are at least partly offset by the presentation of some interesting ideas about energy and resource use in a well-organized presentation.

The publishers describe *Beyond Oil* as an attempt to "...use computer models to examine our declining resource base and the dynamics of energy efficiency, past, present, and future, to the year 2025." The declining resource base (at a pre-1973 pace) is certainly examined, but the book falls short of accurately assessing the dynamics of energy efficiency, past, present, and future. Some revealing statements show this to be true.

For example, one of the primary findings of the study, the authors claim, is that "...around the turn of the new century we will use more energy exploring for oil than we gain from it" (p. xxvii). But if oil exploration entails using oil and gasoline to locate oil sources of less total value, then, barring any subsidies of oil exploration, simple economics will prevent this from happening. A freely functioning market system will ensure that no firm spends more than it earns in the search for oil.

Another result is that, "by the second decade [of the 21st century]...U.S. farmers...could find energy so unaffordable that we would cease being a net exporter of agricultural products" (p. xxvii). But U.S. farmers will be no more affected by high fuel prices than farmers elsewhere. If U.S. farmers face high fuel costs, so will other producers. Differences in production costs will still be closely linked to other inputs, such as land and marketing infrastructure.

The authors also foresee the decline of agriculture as we know it. "Modern industrial agriculture is inextricably tied to oil; it has flourished and it will decline in step with oil production" (p. xxx). However, they redeem themselves with the observation that, "technology seems to help us take resources from the past and future to increase present consumption" (p. xxx). That will no doubt hold in the future as well as now.

The view that oil will become increasingly scarce without any replacement technologies is an extremely narrow one. Some futurists hold that as much technological progress will be made in the remainder of this century as was made in the century up to this time. If actual progress falls somewhere between the extremes of no progress or great progress, the model results based on no progress expounded in this book will be drastically off the mark.

While the text goes into great detail regarding carrying capacity (number of individuals of a species that can be supported in a substainable way in a particular region), technological advance, and population growth, the authors sum up their case early on: "Over the last fifty years, we have made serious inroads into the supply of many of our high-quality fuels and other natural resources. As a result, perhaps the most important hypothesis of this book is that: The supply of fuels and other natural resources is becoming the limiting factor constraining the rate of economic growth" (p. 9).

But then they lapse back into a more questionable rationale for socioeconomic events. "The technology exists for putting moving sidewalks in cities or building extremely lightweight cars from exotic alloys, but society has decided that the energy and material needed to implement this technical knowhow are needed elsewhere. We simply don't have the resources to do everything we know how to do or would like to do" (p. 9).

Society as a group "decides" what activities to pursue through the market, or price, system (in combination with political constraints). This should be noted explicitly, not left for the reader to infer—the reader might misunderstand or misinterpret how this "decision" takes place. The method is as important as the result because the same concept applies to the search for and development of alternative technologies to fossil fuels. The market system offers the incentive for development of different fuels or even entirely new technologies.

The book, then, is an entertaining grab-bag of ideas and history. Its major weak point, alas, appears to be its purpose for being: The projections of energy availability (to agriculture) over the next 40 years and the impending threat (if any) to food and fuel.

RESOURCE COMMUNITIES: A DECADE OF DISRUPTION

D. Detomasi and John W. Gartrell, eds. Boulder, Colorado: Westview Press, 1984. 193 pages. $22.50.

Reviewed by Mike D. Woods

The current glut in the international oil market has put many energy developments, like those described in the book, on hold. This fortuitous pause may give researchers and practitioners an opportunity to reflect on the lessons learned concerning the impact of such projects on rural communities. For if supply and demand factors behave as many expect, we will have many future opportunities to grapple with the issues addressed here.

The 11 papers that make up this book are the result of the Second International Conference on Energy Resource Communities held in Calgary and Edmonton, Alberta, Canada, in 1982. The papers survey the state of the art regarding impact assessment and review current literature regarding problems, issues, and opportunities confronting communities with large-scale energy projects. The papers represent the experiences and points of view of scholars from four nations: Canada, Norway, the United Kingdom, and the United States.

The articles address topics like: public facility and service provision; changes in economic structure and employment opportunities; income distribution effects; social consequences of rapid growth; impacts on indigenous people; offshore oil activity and community impacts; the systems approach to impact management; and phasing and timing of projects.

Ira M. Robinson presents an excellent overview of resource towns, using Canadian frontier towns as examples. Special problems confronting these resource

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towns include instability (and impermanence), unbalanced demographic structures, isolation of workers and their families from other people, provision of adequate housing, and planning and providing community services such as water and sewer systems. There are no easy solutions to these problems but the paper provides a good starting point for the discussion to come.

Branch, Hooper, and Moore continue this line of thought in a discussion of decisionmaking under uncertainty. If community expectations are too high regarding anticipated growth, too many public works may be undertaken. On the other hand, if expectations are too low, the community will be continually playing "catch-up" in providing services. This is a problem almost all communities face but one greatly magnified with the rapid growth of resource communities. Branch, Hooper, and Moore note local decisionmakers often experienced problems in collecting, developing, and using information regarding the impact in question. The forecasts and analyses were often inaccessible because of cost, complexity, or sponsorship of the study.

Pulver, Selvik, and Shaffer, reviewing the impact of major economic developments on community income distribution, find that total personal and per capita income generally increase. There are fewer studies concerned with the question of income distribution (who gains and who loses). A general finding is that the inmigrants experience much of the income gain, especially during the construction phase of the project. Some local residents gain, others are worse off. "The elderly, female heads of households, and those who remain unemployed are most commonly affected adversely" (page 82).

Gartrell, Krahn, and Trytten review the literature concerned with the social consequences of rapid growth. Several Canadian examples emphasize the problems cited in the literature: family breakdown, conflict of lifelong residents with inmigrants, crime, stress, and other impacts on quality of life. Noting a tendency in the literature to criticize the absence of sociological analysis while contributing none (page 93), Gartrell, Krahn, and Trytten offer a research agenda concerned with occupation, status level, and changes in class structure in impacted communities. For research to be meaningful, the authors note, changes over time should be emphasized.

Hobart reviews the impact of resource development projects on the native people where the project occurs, specifically the Eskimo population in northern Canada. The primary concern addressed is allowing the native residents to participate in economic gains from the project while minimizing cultural shock or clash. Three alternatives are reviewed: have the work site in the home community, relocate the work site (for example, move the native people to a company town to be employed by the industry), and finally, rotate employment (allow workers to alternate between home and work site). The rotation alternative was found to be most desirable for short periods (less than 3 weeks). Rotation allowed the native people to maintain their traditional community and culture while enjoying some economic gain from the development. An interesting topic, but the lessons learned seem not to be transferrable to situations in other countries.

The book includes discussions of many issues facing resource communities undergoing rapid change. The authors have done a good job reviewing and reporting the relevant literature. The book lists over 300 citations from the various papers. This list alone will help the researcher or practitioner interested in the topic. A limitation that detracts from the book is that several citations listed in individual papers are not included in the bibliographies (example, House, 1981, p. 175). This, however, is a minor flaw in an excellent book reviewing special issues facing resource communities. For the reader interested in energy resource development and impact analysis, the issues are well summarized and documented.

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